

EMMA ROGERS ROOM

technology review

Published by MIT

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The Technology Review

Published at 10 Depot St., CONCORD, N. H.
Editorial Office: Cambridge, Mass.

Vol. XIX

JANUARY, 1917

No. 1

THE NEW ENGINEERING LABORATORIES

The wonderful facilities they offer to the Tech Student of today. Expansion of department 300 per cent. Equipment modern and practical.

Many of the older alumni will recall the engineering laboratories when located in the basement of Rogers Building. In 1886 these laboratories contained a Harris Corliss engine, a Porter Allen engine, a calorimeter, a belt machine, two testing machines and some minor apparatus. When Engineering Building A was built on Trinity place, these laboratories were given a much larger floor space, occupying at that time about 16,000 square feet. This was increased later by the addition of Engineering Building B and the Pierce Building, until at the time of moving a total floor space of something over 25,000 square feet was available.

The engineering laboratories in the new Technology cover an area, exclusive of offices and corridors, of about 70,000 square feet. Before planning the laboratories a study was made of the equipments of the leading engineering schools both in this country and abroad. A number of the staff having had opportunity to inspect foreign schools were familiar with their equipment. Many of the leading steam, hydraulic, and refrigerating engineers were asked to criticise the preliminary plans and assistance of great value was obtained through this means.

The equipment of the laboratories was selected with the following objects in view: First, to give a student practice in such experimental work as an engineer in the pursuit of his profession is called upon to perform; and second, to provide ample facilities for original investigation and research in engineering subjects.

In order to develop these laboratories and in order to facilitate the carrying on of research work of a high order it seemed advisable that the laboratory should be divided into six branches, *i. e.*, material testing, steam and compressed air, hydraulics, power measurement, refrigeration and gas engine, and that there should be in immediate charge of each branch one who is an expert in the particular line of experimental work to be conducted in that branch. At the present time, the heads of the different branches of the laboratory, together with a director, constitute an administrative staff, responsible for the conduct of the regular class work, for the development of the laboratory as a whole, and for the apportionment among the different branches of any funds which may be available.

Throughout the basement of the steam, hydraulic and refrigerating laboratories canals have been constructed in the sub-basement. These canals which total about 700 feet in length vary in width from 2 to 8 feet and are 5 feet in depth. By means of stop logs different levels may be carried in different parts of the canals. Water from the river is supplied to these canals through two 14" valves and a 30" discharge pipe leads back to the river on the downstream side of the intake. The normal river level makes a depth of 14" of water in these canals. Since no oily water can be returned to the river, separate provision had to be made to take care of the condensate from reciprocating engines and pumps. This condensate, after being weighed, is discharged into openings, one being provided in each bay, which connect with the sanitary sewer. Running throughout nearly the whole length of the steam laboratory there are two canals about 10' apart and over these canals are suspended seven condensers used in connection with the experimental work. Water supplying these condensers is taken from one canal, pumped through the condenser and discharged into the other canal, this second canal being cut off from the first by stop logs and opened to the 30" return leading back to the river.

The equipment of the laboratory as a whole may be best understood by taking up separately that of each of the six branches.

The material testing laboratory, having a floor space of about 16,000 square feet, occupies three floors and the basement of a building extending west from the southerly end of the long building which forms the westerly side of the main court. The basement of this building is given over largely to work on concrete.

It contains two motor-driven machine mixers, with necessary storage bins, used in the fabrication of large sized beams, a room of about 1,080 square feet area used for hand mixing and testing of cement, storage racks, damp closets, etc., also a brine cooled storage room.

About 670 square feet is occupied by the apparatus used in testing road materials; about 400 square feet is taken by hydraulic pumps working up to 10,000 pounds per square inch used in testing to destruction cylinders, etc., subjected to internal pressure.

On the first floor of this laboratory is a 300,000-pound Emery testing machine, taking a piece 12 feet long in tension and 18 feet long in compression; a 400,000-pound Riehlé machine; a 200,000-pound Olsen machine with outriggers; a beam testing machine of 100,000 pounds capacity in spans up to 26 feet; a 1,000,000 Amsler Laffon compression machine, now awaiting shipment from abroad; and a chain and rope testing machine of 100,000 pounds' capacity.

The second floor contains three testing machines of 100,000 pounds' capacity and one of 50,000 pounds; three torsion machines, the largest having a capacity of 154,000 inch-pounds and three wire testing machines.

On the third floor there are two more tension machines, one of 70,000 pounds' capacity and one of 60,000 pounds' capacity, this latter having automatic and autographic attachments; a bending machine and some repeated stress apparatus.

This floor contains also a laboratory completely equipped for research work on heat treatment of metals.

Adjacent to this laboratory are rooms for preparing specimens for etching; for taking and developing photomicrographs and for making tests on hardness and on the machining hardness of metals.

The hydraulic laboratory with a floor space of about 24,700 square feet occupies three floors at the southerly end of the long building forming the west boundary of the main court. Nearly all of the main equipment in this branch is new.

The largest piece of apparatus is a complete plant for testing water wheels. Wheels using up to 50 cubic feet per second can be tested under heads of 38 feet. A Worthington centrifugal pump, with 36" suction, driven by an angle compound engine of 350 horse power draws water from the canals in the basement and discharges it through a 30" Venturi meter into a steel canal 5 feet

wide, 5 feet deep and 135 feet long, located on the second floor. This steel canal discharges into a steel penstock 12 feet in diameter supported on I beams spanning a tail race 10 feet wide and 90 feet long, the bottom of this tail race being about two feet below the basement floor.

The water wheel to be tested is submerged in the penstock and attached to a casting bolted to the steel plate which forms the bottom of the penstock; this plate resting on the I beams which span this end of the tail race. A draft tube is attached to the bottom of this same casting.

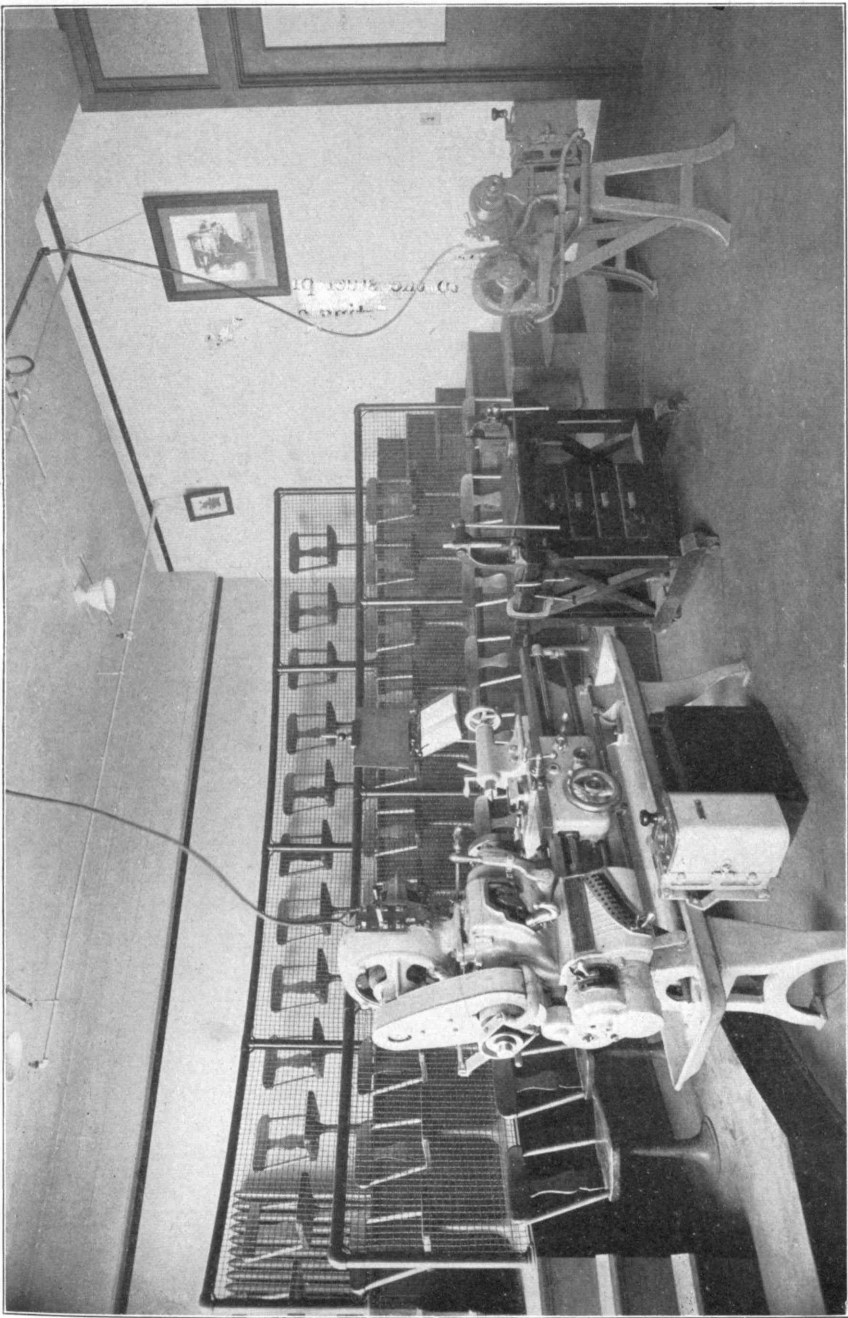
The back end of the tail race is built up 16 feet above the floor. A main hydraulic gate 10 feet wide and 10 feet deep, provided with grid openings controlled by a second grid gate sliding on the main gate may be operated from the first floor, so as to hold any level desired in the pit under the draft tube and thus vary the effective length of the draft tube. This gate with grid gate weighs 10 tons, its bearing surface being composition covered, to prevent corrosion.

Water after passing the main gate flows over a submerged weir and finally over a standard crest 10 feet wide.

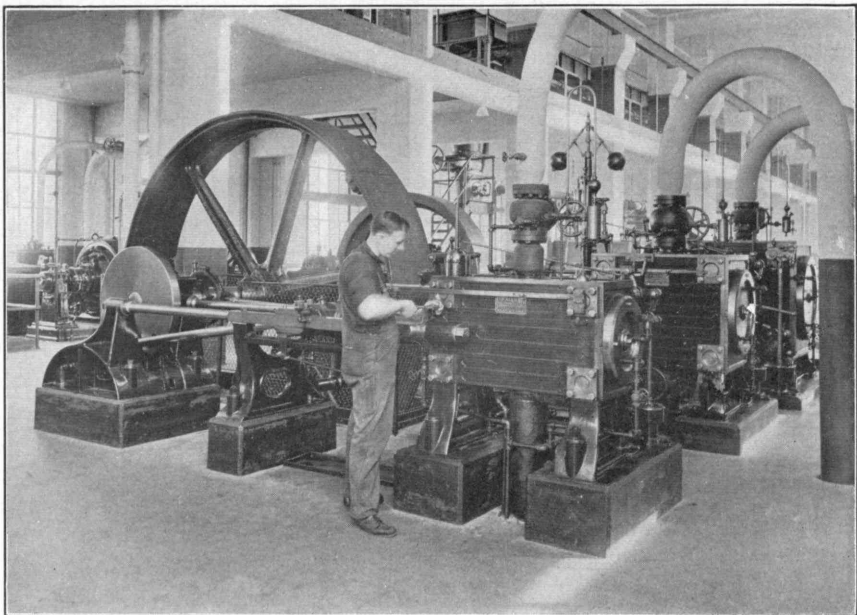
In order to test weirs of moderate size and to measure with accuracy quantities of water under 1000 cubic feet per minute a trough 3 feet square and 100 feet in length has been constructed to discharge into four large tanks, two 10 feet in diameter and 10 feet tall and two 6 feet in diameter and 10 feet tall, supplied with gage glasses for measuring levels. These tanks are filled and discharged alternately through large valves operated by hydraulic cylinders.

Water under static heads up to 500 feet is obtained in quantities up to 1500 gallons per minute by pumping water into, and compressing the air in a closed cylinder 5 feet diameter, 30 feet tall, made of $\frac{7}{8}$ " steel plate. A second closed cylinder of the same diameter but only 20 feet tall gives a head of 150 feet. These closed cylinders supply three water wheels of the impulse type and also offer facilities for experiments on the flow through orifices.

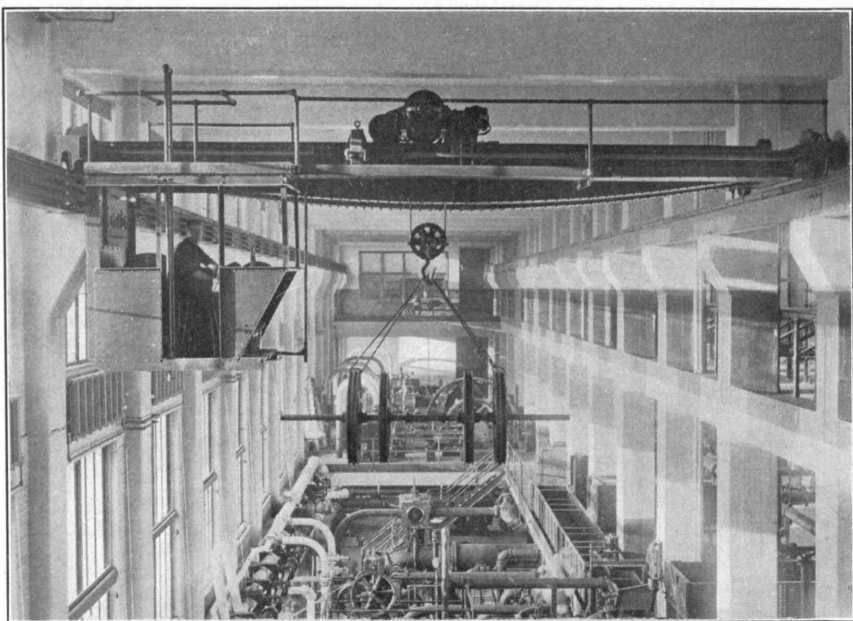
Water under pressures up to 250 pounds is supplied by either a steam driven outside packed Warren pot valve pump of a capacity of 1500 gallons per minute, by a 100 horse power Terry turbine driving a four-stage Janesville centrifugal, or by a rotary pump of large size. Water under pressures up to 150 pounds is supplied by two $16'' - 10\frac{1}{2}'' \times 12''$ duplex pumps, by a 150 horse power De Laval



DEMONSTRATION ROOM—MACHINE TOOL LABORATORY



MECHANICAL ENGINEERING LABORATORY—150 H. P. CORLISS ENGINE



MECHANICAL ENGINEERING LABORATORY—TRAVELING CRANE OVER
LARGE UNITS IN STEAM AND HYDRAULIC LABORATORY

turbine with two stage centrifugal, by a Gould or a Davis triplex pump, by a large Emerson pump and by two pulsometers.

In order to test reciprocating pumps with varying suction lifts, two wells each 10 feet long and 5 feet wide extend 26 feet below the basement floor; water being supplied from the canal system to these wells by 16" valves operated from the floor; the level being maintained by the amount of opening given these valves which have been designed in the form of a cone having a very small taper so as to make accurate regulation possible.

A raised platform about 15 feet x 15 feet has been built up over these deep wells. This platform, which is about 42 feet above the bottom of the well and 16 feet above the basement floor, serves as the operating platform for a Luitweiler deep well pump, for a 4" Pohlé Air Lift pump, for a Weber subterranean pump, for an Emerson steam pump and for a pulsometer.

A Rife hydraulic ram with 4" drive pipe and a Gould double ram with two 3" drive pipes have been installed on the second floor; the water discharged and the overflow being weighed in the basement.

The steam and compressed air laboratory, occupying about 16,300 square feet, is in the northerly end of the building containing the hydraulic laboratory.

On the second floor six small engines, including the old Harris Corliss engine, have been set up side by side. These engines are used for instruction in valve setting. Most of these engines are connected with surface condensers in the basement. There is, also, on this floor equipment for testing steam injectors under suction lifts varying from 0 to 26 feet.

On the first floor of this laboratory are a number of engines and steam driven compressors all arranged for test, the steam end of each machine being connected with one or more condensers.

The engines are enumerated below:

- A 9"-18"-24" x 30" triple expansion Reynolds Corliss engine.
- A 11"-19" x 15" McIntosh & Seymour tandem compound engine.
- A 14"-16" x 23" McEwen tandem compound engine.
- A 12"-20" x 12" Westinghouse compound engine.
- An 8½" x 8" Westinghouse simple engine.
- A 11" x 30" Brown engine.
- A high speed yacht engine.
- A 75 K. W. Curtis turbine.

In addition to the above there are in the basement the following, each connected to a condenser and available for testing:—a 150 horse power De Laval turbine; a 100 horse power Terry turbine; two 16–10½ x 12 duplex steam pumps, an angle compound engine, referred to in the description of the hydraulic laboratory; a direct connected Sturtevant generator set; two dry air pumps, a small Kerr turbine circulating set and a similar De Laval circulating set.

An independently fired superheater capable of superheating 20,000 pounds of steam per hour to a temperature of 1000° F. is located in the basement, within a short distance of a cast iron test block 10' x 20' to which steam machinery brought in for tests may be strapped.

The surface condensers are located in the basement as has been previously stated. Tests of steam calorimeters, experiments on the flow of steam or air through orifices and tests on vacuum sweeping outfits are carried on in the basement.

One corner of the first floor of this laboratory is occupied by air compressors which when not under test may be used for furnishing air for building service. These compressors comprise:—a three stage Norwalk compressor with cylinders 8'–4½'–1½' x 12' compressing air to 2500 pounds per square inch; an Ingersoll-Rand two-stage compressor; an 8' x 8' Chicago Pneumatic Tool compressor; a large machine built by the Sullivan Machinery Company, and one or two small machines.

The refrigerating laboratory occupies a part of the basement and a part of the first floor of a building running easterly from the building containing the steam and hydraulic laboratory. About 4600 square feet have been allotted to this branch. The Institute has never had any facilities for experimental work in this line and in the past such work as has been done has been carried on at the Quincy Market Cold Storage & Warehouse Company's plants, where every courtesy has been extended. The machines have not as yet been erected in this laboratory.

A 5-ton ammonia compression machine; a 3-ton CO₂ machine and six special condensers, brine coolers, etc., to be used in experiments on interchange of heat are on the ground ready for erection. A 5-ton absorption machine has been donated by the Carbondale Company.

The power measurement laboratory occupies 2600 square feet on the third floor of this same building.

While in the past a student has had an opportunity to become familiar during his laboratory course with the different methods of measuring power, he has had no chance to study the accuracy of the different methods. The work in this branch is to include tests on power scales, dynamometers, torsion dynamometers, transmission of power by belts and by silent chains, balancing, critical speed of shafting, variable speed transmissions, efficiency of fans, etc.

The gas laboratory is located on Vassar street east of the power house, in a two-story building 40 x 80. On account of the danger of fire, on account of the noise due to unmuffled exhaust, on account of the poisonous fumes coming from the exhaust it seemed wise to separate this building from the main educational group.

A part of the second floor is cut away so that a 5-ton crane may serve a certain area of the lower floor and so that vertical engines extending above the second floor level may be erected.

This laboratory contains a 60 horse power suction producer, a four-cycle gas engine 16" x 24" of 60 horse power, a 50 horse power Diesel engine, a four-cycle gas engine 11" x 18" of 36 horse power, two smaller gas engines of 12 and 4 horse power, respectively, a two-cycle oil engine of 6 horse power, two four-cycle oil engines of 20 and 30 horse power, respectively; three four-cylinder automobile engines, two single cylinder two-cycle motor boat engines, two hot air engines, a small gasoline engine and air compressor for starting the larger gas engines, two test blocks for temporary tests of automobile engines and a cast iron bed plate for tests of large gasoline engines.

This laboratory also contains a cast iron bed plate 5' x 9' so mounted that rotating-cylinder engines can be tested and full sized propellers used for loading the engines.

Throughout the material testing laboratory, cranes of from 2 to 5 tons' capacity have been installed over every large machine and in the steam and hydraulic laboratory a 10-ton Shepard electric crane suspended under the ceiling of the second floor covers practically all of the heavy machinery. All heavy machinery is lifted by this crane from trucks which back into the laboratory through a receiving door located on the Massachusetts avenue side of the building.

Throughout the laboratory the pipes have been painted with colors which designate what the pipe carries. This method of

marking has in the past been of great help to students. The system has now been extended to cover pipes carrying H_2S , distilled water, etc., so that all through the Institute all pipes used for the same purpose are painted the same color.

During the past four months the engineering laboratories have been inspected by professors from engineering schools, by engineers interested in engineering education and by others familiar with the equipment of engineering schools in both Europe and America. These men have expressed their opinion that these laboratories, taken as a whole, are unsurpassed by any in the world.

EDWARD F. MILLER, '86.

Report of Rand Memorial Committee

The Rand Memorial Committee which was formed in 1914 by the classes of 1904-1913, inclusive, has made its final report through the secretary, Herbert Fryer, '11.

The committee has collected \$733.01 and disbursed approximately for printing and postage \$193.26, leaving a balance of \$539.75, which is available for the Memorial. The committee has decided to turn over this fund to Bursar Ford of the Institute in order that he may properly arrange for the fireplace in the Walker Memorial Building in memory of Mr. Rand. There will be a deduction from this amount to purchase a photograph of Bursar Rand, which will be placed somewhere in the Walker Memorial Building.

H. E. Kebbon, '12, a member of the committee and a representative of the architect, W. W. Bosworth, has submitted a design for a fireplace which is very pleasing in effect and which will be an ornamental feature of the lounge.

The inscription on the fireplace will be as follows: "Dedicated to the Memory of Frank Henry Rand, Bursar at Technology and loyal friend of all."

INTERESTING FIGURES OF REGISTRATION

One hundred and ninety-six colleges are represented at Tech
by former students—One instructor to every 5.9 men—
Thirty-eight candidates for advanced degrees

The total number of men registered at the Institute is 1,957; last year there were 1,900. The total number of new men is 792. Of these new men, 369 are in the freshman class. The total number of men at the Institute who have attended another college before coming here is 588, or 30 per cent. of the entire registration. The total number of new students from other colleges is 308, or 38.8 per cent. of the new men registered. The total number of graduates from other colleges enrolled at the Institute is 327, or 16.7 per cent. of the total registration. The total number of the teaching staff at the Institute is 331, which allows one instructor to every 5.9 men. There are 38 candidates for advanced degrees, and there are 16 women students.

The percentage of men from Massachusetts in the freshman class is 49. The percentage of men from Massachusetts in the entire school is 56.7.

There are 196 colleges represented here. The list of colleges represented and the number of men from each is as follows: University of Alabama, University, Ala., 2; Alabama Polytechnic Institute, Auburn, Ala., 2; Amherst College, Amherst, Mass., 10; Armour Institute of Technology, Chicago, Ill., 2; Bates College, Lewiston, Me., 4; Baylor University, Waco, Texas, 1; Bellevue College, Bellevue, Neb., 1; Beloit College, Beloit, Wis., 2; Boston College, Boston, Mass., 3; Boston University, Boston, Mass., 4; Bowdoin College, Brunswick, Me., 4; Polytechnic Institute of Brooklyn, Brooklyn, N. Y., 2; Brown University, Providence, R. I., 2; University of California, Berkeley, Cal., 7; Canisius College, Buffalo, N. Y., 1; Carnegie School of Technology, Pittsburgh, Pa., 1; Case School of Applied Science, Cleveland, Ohio, 6; Catholic University of America, Washington, D. C., 5; College of Charleston, Charleston, S. C., 1; University of Chicago, Chicago, Ill., 1; University of Cincinnati, Cincinnati, Ohio, 1; College of City of New York, N. Y., 3; Clark University, Worcester, Mass., 1; Colby College, Waterville, Me., 3; Colgate University, Hamilton, N. Y., 2; Colo-

rado Agriculture College, Ft. Collins, Colo., 1; Colorado College, Colorado Springs, Colo., 1; Colorado School of Mines, Golden, Colo., 1; University of Colorado, Boulder, Colo., 1; Columbia University, New York City, 6; Cooper Union, Brooklyn, N. Y., 1; Cornell University, Ithaca, N. Y., 9; Cotner University, Nebraska, 1; Dartmouth College, Hanover, N. H., 22; Davis and Elkins College, Elkins, W. Va., 1; Denison University, Granville, Ohio, 2; University of Denver, Denver, Colo., 2; Drake University, Des Moines, Iowa, 1; Drury College, Springfield, Mo., 2; Fargo College, Fargo, N. D., 1; Franklin and Marshall College, Lancaster, Pa., 1; Geneva College, Beaver Falls, Pa., 1; Georgetown College, Washington, D. C., 2; Georgetown University, Washington, D. C., 1; Georgia School of Technology, Athens, Ga., 4; Gonzaga University, Spokane, Wash., 1; Grinnell College, Grinnell, Iowa, 2; Hamilton College, Clinton, N. Y., 4; Harvard University, Cambridge, Mass., 46; Haverford College, Haverford, Pa., 3; Hobart College, Geneva, N. Y., 1; Holy Cross College, Worcester, Mass., 1; University of Illinois, Urbana, Ill., 5; Iowa State University, Ames, Iowa, 2; John B. Stetson University, De Land, Fla., 2; Johns Hopkins University, Baltimore, Md., 1; Kalamazoo College, Kalamazoo, Mich., 2; University of Kansas, Lawrence, Kan., 2; State University of Kentucky, Lexington, Ky., 1; Lafayette College, Easton, Pa., 1; Lake Forrest College, Lake Forrest, Ill., 1; Lawrence College, Appleton, Wis., 1; Lehigh University, South Bethlehem, Pa., 4; Leland Stanford Junior University, Stanford University P. O., Cal., 2; Lincoln University, Lincoln University P. O., Pa., 1; Lombard College, Galesburg, Ill., 1; Louisiana State University, Baton Rouge, La., 1; University of Louisville, Louisville, Ky., 1; Loyola University, Chicago, Ill., 1; University of Maine, Orono, Me., 7; Maryville College, Maryville, Tenn., 1; Massachusetts Agricultural College, Amherst, Mass., 6; Miami University, Oxford, Ohio, 2; University of Michigan, Ann Arbor, Mich., 4; Michigan College of Mines, Houghton, Mich., 1; Middlebury College, Middlebury, Vt., 2; University of Minnesota, Minneapolis, Minn., 3; Mississippi Agricultural and Mechanical College, Agricultural College P. O., Miss., 2; University of Missouri, Columbia, Mo., 3; Monmouth College, Monmouth, Ill., 1; Moores Hill College, Moores Hill, Ind., 1; Mt. Holyoke College, South Hadley, Mass., 1; University of Nebraska, Lincoln, Neb., 1; Newberry College, Newberry, S. C., 1; New Hampshire College of Agriculture and Me-

chanic Arts, Durham, N. H., 1; New York University, New York, N. Y., 2; University of North Carolina, Chapel Hill, N. C., 6; Northwestern University, Evanston, Ill., 3; Norwich University, Northfield, Vt., 4; Notre Dame, 2; Oberlin College, Oberlin, Ohio, 5; Occidental College, Los Angeles, Cal., 1; Ogden College, Bowling Green, Ky., 1; Ohio State University, Columbus, Ohio, 2; Ohio University, Athens, Ohio, 1; Ohio Wesleyan University, Delaware, Ohio, 1; University of Oklahoma, Norman, Okla., 1; Oregon State Agricultural College, Corvallis, Ore., 1; Pennsylvania College, Gettysburg, Pa., 2; Pennsylvania State College, State College, Pa., 3; University of Pennsylvania, Philadelphia, Pa., 10; Princeton University, Princeton, N. J., 9; Purdue University, LaFayette, Ind., 3; Radcliffe College, Cambridge, Mass., 4; Reed College, Portland, Ore., 1; Rensselaer Polytechnic Institute, Troy, N. Y., 3; Rhode Island State College, Kingston, R. I., 1; Rice Institute, Houston, Texas, 1; University of Rochester, Rochester, N. Y., 7; Rutgers College, New Brunswick, N. J., 1; College of St. Anne, 1; St. Anselm College, Manchester, N. H., 1; College of St. Elizabeth, Convent Station, N. J., 1; St. John's University, Toledo, Ohio, 2; St. Olaf College, Northfield, Minn., 1; St. Xavier's College, Cincinnati, Ohio, 2; Military College of South Carolina, Charlestown, S. C., 3; University of South Carolina, Columbia, S. C., 2; University of the South, Sewanee, Tenn., 1; Spring Hill College, Mobile, Ala., 1; Syracuse University, Syracuse, N. Y., 2; University of Tennessee, Knoxville, Tenn., 1; University of Texas, Austin, Texas, 3; Texas Agricultural and Mechanical College, College Station, Texas, 4; Throop College of Technology, Pasadena, Cal., 2; Trinity College, Washington, D. C., 2; Tufts College, Tufts College, Mass., 7; Tufts Medical College, Boston, Mass., 14; Tulane University, New Orleans, La., 1; Union College, Schenectady, N. Y., 2; United States Military Academy, West Point, N. Y., 3; United States Naval Academy, Annapolis, Md., 22; Ursinus College, Collegeville, Pa., 1; University of Utah, Salt Lake City, Utah, 2; Agricultural College of Utah, Logan, Utah, 1; Valparaiso University, Valparaiso, Ind., 1; Vanderbilt University, Nashville, Tenn., 1; University of Vermont, Burlington, Vt., 2; University of Virginia, Charlottesville, Va., 3; Virginia Military Institute, 5; Washburn College, Topeka, Kan., 3; University of Washington, Seattle, Wash., 6; Washington and Jefferson College, Washington, Pa., 2; Washington and Lee

University, Lexington, Va., 4; State College of Washington, Pullman, Wash., 1; Wesleyan University, Middletown, Conn., 7; Western Reserve University, Cleveland, Ohio, 1; Williams College, Williamstown, Mass., 10; College of William and Mary, Williamsburg, Va., 1; University of Wisconsin, Madison, Wis., 4; Wofford College, Spartanburg, S. C., 1; University of Wooster, Wooster, Ohio, 3; Worcester Polytechnic Institute, Worcester, Mass., 9; University of Wyoming, Laramie, Wyo., 2; Yale University, New Haven, Conn., 21.

Foreign universities and institutions represented: Acadia University, Nova Scotia, 2; Belgian Institute, Liege, Belgium, 2; Cambridge University, England, 1; Central Turkey College, 3; Central University of Quito, Ecuador, S. A., 1; University of Chile, Santiago, Chile, 2; Chinese Naval Academy, China, 4; Colegio del Rosario, Colombia, S. A., 1; Dalhousie University, Halifax, Nova Scotia, 1; Euphrates College, Turkey, 1; Imperial German Naval College, Germany, 1; Institute of Havana, Havana, Cuba, 2; National Institute of Salvador, Salvador, C. A., 1; National Institute of Honduras, Honduras, 2; Japanese Naval College, Tokyo, Japan, 1; Kyoto Imperial University, Japan, 2; London University, London, England, 1; McGill University, Vancouver, B. C., 1; McGill University, Montreal, Canada, 4; University of Manitoba, Winnipeg, Canada, 2; Meizi College of Technology, 1; Nanyang College, China, 4; Canton Naval College, Canton, China, 1; Naval Academy, Chile, S. A., 6; University of Paris, France, 2; Peking University, China, 1; University of the Philippines, Manila, P. I., 1; Robert College, Turkey, 1; University Santa Clara, 1; Instituto de Santa Clara, 1; Syrian Protestant College, Beirut, Syria, 3; Hochschule zu Darmstadt, Germany, 2; Technology Hochschule-Karlsruhe, Baden, Germany, 1; Technology Hochschule (zu Sachsen), 1; Tokio Imperial University, Japan, 2; Tong-Shan English College, China, 1; University of Toronto, Canada, 1; Tsing Hua College, China, 11; Turin University, Italy, 1.

The registration this year shows 122 men from foreign countries or 6.2 per cent. of the entire registration.

The countries represented are as follows:

Argentine Republic, 1; Austria Hungary, 1; Brazil, 1; Canada, 16; Chile, 8; China, 40; Colombia, 3; Costa Rica, 1; Cuba, 8; Denmark, 1; Ecuador, 1; Egypt, 1; England, 1; Germany, 1; Honduras, 3; India, 1; Italy, 2; Japan, 8; Mexico, 9; Norway, 3; Russia, 2; Salvador, 1; Siam, 1; Syria, 1; Turkey, 6.

Reunion of
Technology Clubs Associated

and Alumni of

Massachusetts Institute of Technology

at

Cleveland, Ohio

Thursday, Friday and Saturday

April 19, 20, 21, 1917

Arrangements in charge of

Technology Club of Northern Ohio

Publicity Headquarters
1459 Leader Building
Cleveland, Ohio

The Technology Club of Northern Ohio hereby extends a cordial invitation to the Technology Clubs Associated, and Alumni of Massachusetts Institute of Technology to attend the reunion in Cleveland, April 19th, 20th and 21st. The plans are virtually completed and a general outline of the three days' program follows and everything considered this should be a momentous meeting and every Tech man should make a sacrifice, if necessary, to be present.

TIME—Thursday, Friday and Saturday, April 19th, 20th and 21st, 1917. Registration Thursday morning.

HEADQUARTERS—Hotel Statler, Cleveland. Several hundred rooms are under reservation for our meeting and it is not too early for you to write direct to the hotel and get your definite assignment—All rooms have baths; rates are reasonable, from \$1.50 to \$5.00 per day.

GENERAL TOPIC FOR CONSIDERATION

"Technology's Opportunity for Service"

This will be the serious side of our meeting and surely every Tech man with red blood in his veins will lay aside everything else and by his presence and thoughtful consideration help in lining up Technology's reserve and potential force for the service of our country.

It is anticipated that authorized representatives from a large proportion of the fifty-one Technology Clubs will be present at this meeting, prepared to make reports embodying the sentiment of their clubs and authorized to take such action as may provide for frequent reports from the Preparedness Committee of each club of the progress in ideas and development from their section of the country, and for the publication of such reports to members of the Technology Clubs and through the TECHNOLOGY REVIEW to the alumni generally.

The business meeting of Technology Clubs, Associated will devote its attention, particularly, towards "Industrial

Preparedness" along the lines of concerted action by the alumni in recommending and urging continuous effort toward modernizing equipment, improving products, reducing costs and avoiding or utilizing wastes, particularly along the lines of industry and transportation, with full recognition of the dangers from world competition and the necessity for co-operative effort of the nation, the community, the employer and the employee.

The general topic for discussion at the meeting of the Technology Clubs Associated, Saturday afternoon and at the banquet Saturday evening will be "Technology's Opportunities for Service." It is expected that the speakers at the banquet will devote their attention to this topic in a general way, and that the representative from the National Research Council will discuss the promotion of research at the Institute and in Industrial Organizations wherever Tech alumni are influential; also that the representative of the National Council of Defense will speak particularly on the "Personnel Index" of the alumni to determine their availability in various definite directions. It is also anticipated that the remaining speakers will be amply qualified to speak on the subject of "National Preparedness."

Is that not worth while in itself?

EXCURSIONS TO INTERESTING PLANTS, ETC.

Remember that Cleveland while Sixth City in size is first in many other ways, and plans are made to take our guests in automobiles with competent guides to inspect plants and places of interest, such as, Nela Park of the National Electric Lamp Association, ore docks, furnaces, rolling mills, pumping stations and various other manufacturing plants. *We will take you anywhere to see anything you want to see, if you will let us know what it is.*

AKRON DAY—On Friday the entire delegation will be the guests of the Akron contingent of our Northern Ohio Technology Club, going to and from Cleveland by special

train. Vistors will be received at Akron by the Akron members, escorted to the various plants, entertained at luncheon and returned to Cleveland in time for the evening meeting—the wonderful rubber industries at Akron are well worth a long journey to see.

SOCIAL EVENTS

On Thursday evening a beefsteak dinner at the University Club will be followed by a smoker and entertainment.

On Friday evening the moving pictures taken in Boston last June will be shown in connection with a vaudeville program.

On Saturday evening will be held the banquet already referred to, when Dr. Maclaurin and other nationally known guests will speak.

Other lunches and functions are under consideration, looking toward making the social side of the meeting enjoyable and diverting.

LADIES' ENTERTAINMENT

It is expected that a large number of ladies will be our guests and elaborate plans are in contemplation for their entertainment. On Thursday, a Thé Dansant in the afternoon, followed by dinner and a theatre party in the evening. On Friday the ladies will be invited to accompany the party to Akron and provisions made there for their entertainment. Saturday the committee has planned an automobile ride, visiting the Country Club for lunch and tea and taking in several points of interest.

FINANCIAL

Bring the ladies if possible; they will be expected and well cared for.

The only charge to members outside of the Technology Club of Northern Ohio will be a registration fee of probably \$5.00 to cover the cost of the banquet and Saturday noon

luncheon. All the other features will be complimentary, the expenses being borne by the Technology Club of Northern Ohio.

We expect a large delegation from the Institute including Dr. and Mrs. Maclaurin, as well as speakers prominent in national affairs. Make your plans to come to this reunion for what it will mean to You, to Tech and to Our Country.

For any further information address A. D. Hatfield, Chairman Publicity Committee, 1459 Leader Building, Cleveland, Ohio.

SPECIAL CARS

will be run from Boston on B. & A. train No. 49, leaving at 4.45 p.m., April 18th, arriving in time to register on the 19th. For particulars write to

WALTER HUMPHREYS,
Mass. Inst. Tech.,
Cambridge.

HOW THE INSTITUTE HAS PROSPERED

Some of the gifts that have been received during the past year, with the purposes to which they are to be devoted.

The Institute has had a fortunate year in many ways. It has successfully moved from its home of half a century and has taken up its work again in its new buildings on the Cambridge shore of the Charles river basin without any break.

Having the buildings in condition for use President Maclaurin has this year devoted much of his attention to the establishment of an adequate endowment fund, and although very successful when measured by the usual standards, Technology is so large and laboratory methods so great in their demands that he by no means considers his task completed.

The most remarkable feature of the year was the offer by the anonymous "Mr. Smith," who in an announcement made at the great telephone dinner during the dedicatory exercises in June, said he was ready to cover any other man's gift of three dollars with one of five dollars. The only conditions to "Mr. Smith's" offer were that the amount given by him would not exceed \$2,500,000 and that the time limit would be December 31, 1916. It is unnecessary to say that the Institute has secured the gifts of \$1,500,000 necessary to gain his offered maximum, and the two amounts together make an even \$4,000,000.

In addition there have been a goodly number of other gifts, one of \$300,000 for the establishment of the new School of Chemical Engineering Practice, while much in the way of apparatus and machinery has been presented to the Institute. There have been, besides, the payments of legacies willed during the present or in past years. The total amount of these benefactions for which the money has been received during the year is about \$5,800,000.

Following is the list of benefactions to the M. I. T., in some detail:—

Gifts for endowment announced at the telephone dinner during the Dedication exercises in June:—

For endowment, "Mr. Smith"	\$2,500,000
Pierre S. duPont	500,000
Irenée duPont	100,000
Lammot duPont	100,000
Coleman duPont	100,000
— Charles Hayden	100,000
<i>Edwards</i> Edwin D. Adams '65	50,000
Charles A. Stone	25,000
Edwin S. Webster	25,000
Since June, three gifts	120,000
Assured but not before an- nounced	380,000
	<hr/>
	\$4,000,000

The following legacies have been paid during the year:—

E. K. Turner, civil engineering	\$178,000
Mrs. H. A. Henshaw, architecture	15,000
S. W. Cobb, salaries	30,000
Caroline L. W. French, general	95,600
Jonathan French Fund, general	24,000
Lucius Tuttle, general	50,000
William Endicott, general	25,000
W. J. Walker, general	11,000
Matilda H. Crocker, scholarships	30,000
Rose Hollingsworth, scholarships	5,000
Morrill Wyman, student aid	38,000
F. W. Boles, student aid	10,000
C. H. Pratt, School for Naval Archi- tecture	900,000

1,411,600

The following are from living donors:—

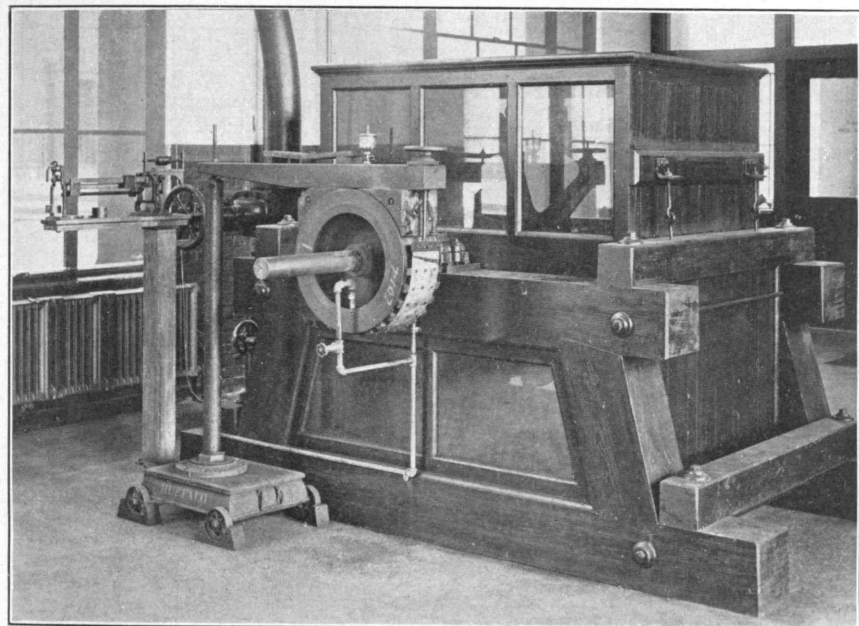
Anonymous, chemical engineering	\$300,000
Galen Stone, buildings	30,000
J. M. Longyear, buildings	20,000
Arthur Winslow, buildings	10,000
A. T. & T. Co., library	9,000
A. T. & T. Co., research	4,000
Anonymous, research	5,000
General Electric, research	1,000

Minor sums, research.....	\$1,800	
Class of 1893, endowment.....	1,893	
Anonymous, social.....	2,000	
	<hr/>	\$384,693
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		\$5,796,293

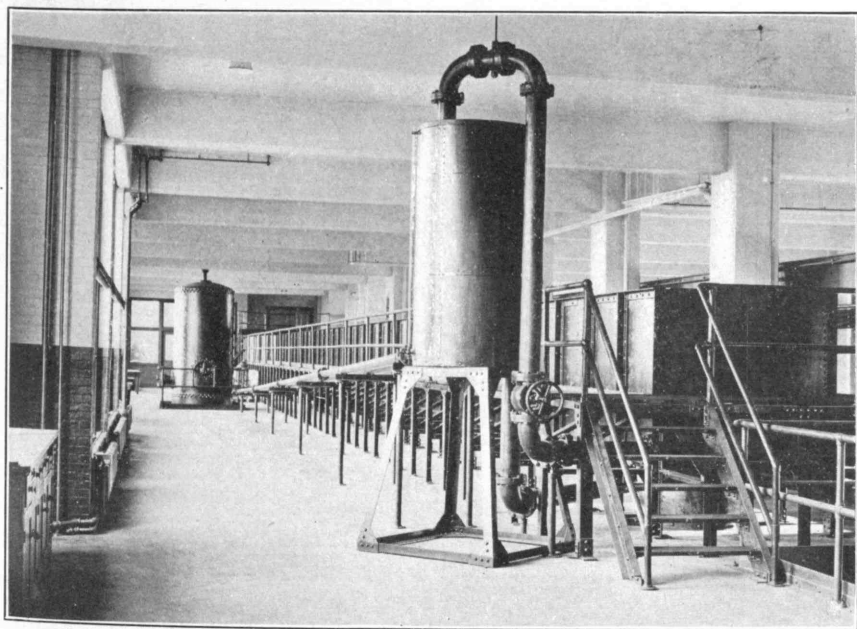
Otto Kahn Member of Corporation

President MacLaurin announces that at the last meeting of the Corporation of the Massachusetts Institute of Technology Otto H. Kahn of New York City was elected life member of the Corporation. Mr. Kahn, who has been for more than a decade a member of the firm of Kuhn, Loeb & Co., has been selected on account of his interest in education, and his cosmopolitan standing, the latter in accord with the ideals of the Institute, which has a deliberate policy of nationalizing its governing body. Mr. Kahn, born in Germany and for a long time resident in England, has been in this country for nearly a quarter of a century. He has kept in touch with European thought through frequent trips abroad, is a remarkable linguist, and has been notable for his breadth of view. Among his gifts to education the best known probably is that of the Kahn Foundation, which till the outbreak of the present war was giving to college professors a vacation in Europe, in order that by what might be termed educational travel, they might be the better fitted to pursue their teaching work in this country. The policy of nationalizing the Corporation of Technology is evidenced by the number of men in its membership who are outside the limits of New England, including such names as Vail, Vanderlip and the duPonts, Coleman and Pierre, while of the term members who are nominated by the alumni four of the fifteen live out of the state and three of these out of New England.

Mr. Kahn's election fills one of the two vacant places in the Corporation; one caused by the resignation of Howard Stockton and the other by the death of Percival Lowell.



PELTON WATER WHEEL—HYDRAULIC LABORATORY



HYDRAULIC LABORATORY—UPPER FLOOR WITH CANAL, RAM AND PRESSURE TANK



CANAL IN UPPER PART OF HYDRAULIC LABORATORY

DECEMBER COUNCIL MEETING

Report of alumni preparedness Committee, and inspection of the new mechanical laboratories. Dinner held in Tech lunch room.

On December 18 the Alumni Council met for dinner in the cafeteria of the new Institute Buildings, and after an excellent dinner, the meeting was called to order with Vice-President Knight in the chair.

The business of the evening called for a report and recommendations of the Committee on the Development of Technology's Resources for Peace and War, and an inspection of the engineering laboratories under the direction of Professor Miller and members of his staff.

A report of the Preliminary Committee on Development of Technology Resources for Peace and War was read by its chairman, Mr. Litchfield, '85, who prefaced the report of the committee by reading a vote of the Executive Committee of the National Research Council, which was forwarded to him by Dr. Hale, '90, chairman of the Council, as follows:

"VOTED, That the National Research Council express its appreciation of the proposed plan of the Alumni Council of the Massachusetts Institute of Technology for stimulating interest in research among its alumni and promoting the further introduction of scientific investigation in the industries with which they may be connected, and its willingness to coöperate with the Alumni Council in any way that may prove desirable and practicable."

The following night letter was recently received from Dr. Hale, who is at Pasadena, California.

"Research Council heartily appreciates willingness of Alumni Council to enlist alumni in promotion of research. Ideals of Institute, as expressed by Rogers reiterated by Maclaurin, are those of Research Council as shown in my address. Working in coöperation with the Research Council and the Council of National Defense, alumni can contribute greatly to national security and welfare."

REPORT OF THE COMMITTEE

The committee, created by vote of the Alumni Council, October 30, to report on a plan for mobilizing Technology resources, in accordance with the suggestions of Dr. George E. Hale, '90, chairman of the National Research Council, and Dr. Hollis Godfrey, '98, member of the Advisory Commission to the Council of National Defense, has given the subject much consideration, and believes that the Alumni Association can be of much service to the National Government at this time when so much analytical and constructive work is demanded.

To most of us this country appears to be serenely and prosperously intrenched within its own borders, the prospect of war extremely vague, and European conditions so remote from us as to figure merely as interesting features of conversation. This lethargic view is extremely dangerous and even menacing.

Frank A. Vanderlip, president of the National City Bank of New York, in addressing the Chicago Bankers' Club, Saturday night, said:

"The belief that the United States could proceed along its own way serene, unaffected by the war and seeking only to keep out of it, showed a failure to understand the unity of the industrial, commercial and financial world.

"State socialism in Europe may develop problems, the like of which never concerned our minds. We may have to meet collective buying, state-aided industries, forms of governmental co-operation with business quite outside our range of thought. Government control of ocean-borne commerce and novel factors in internal finance will be subjects for national consideration. There may come out of the war, changes in forms of government that will have profound and world-wide influence."

It seems to the committee that the first office of a special committee of the Alumni Association might be to present vividly to the members of the association, some of the tendencies that are affecting a broad readjustment of business and social inter-relations in Europe; tendencies so radical that they compel the most open-minded, intelligent and earnest thought. The changing conditions abroad are being brought about through the stress of dire necessity, and we, far removed from the struggle, are in no frame of mind to comprehend either the tendency or its cause. It is particularly an obligation upon us, as an engineering school, to stimulate constructive thought among our members, and by

establishing a method of procedure, blaze the way for extending the work to other institutions and other fields.

The results to be accomplished are equally necessary, whether the nation is at peace or war, and the problems presented can only be solved by scientific methods.

We believe that an alumni committee can be of service:

(1) By studying economic tendencies in Europe produced by the war, and by presenting its observations to the alumni for discussion and concerted action.

(2) By stimulating research at the Institute itself.

(3) By tabulating the various researches that have, and are being conducted by alumni.

(4) By suggesting both to the alumni for their consideration, and to the Faculty as subjects for graduation theses, the lines for experiment and research which should be of the greatest immediate value.

(5) By canvassing the alumni body and creating a personnel index—in effect an inventory of professional ability and experience with a sort of relative appraisal.

(6) By suggesting that the duty of Technology to the national government be made the topic of discussion in local centres, and among classes wherever Tech men come together.

(7) By establishing sub-committees in classes and local centres for the purpose of more effective organization, closer coöperation and wider publicity.

(8) By soliciting carefully thought-out suggestions from the alumni covering any field within the scope of the committee.

The very act of creating this committee will bring it into intimate relations with the best sources of information and advice. The committee will undoubtedly see the desirability of securing the coöperation of consulting experts, and of appointing sub-committees, not necessarily members of the general committee, to study specific problems. In our opinion Technology men are now fully alive to the fact that this is an opportunity, as well as a duty, for technically trained men. We believe that the time is ripe to concentrate all our resources on the study of this immediate question. It should not be difficult for such a committee to finance itself.

We therefore recommend that the Council set up a committee to be known as "The Committee for Mobilizing Technology Resources," this committee to consist of not less than twenty-five

members, with an executive committee of not less than five. This committee shall have power to add to its members and to appoint sub-committees as it may see fit.

Signed JAMES P. MUNROE, '82,
RAYMOND B. PRICE, '94,
MERTON L. EMERSON, '04,
I. W. LITCHFIELD, '85, *Chairman*.

In the discussion of this report, Mr. J. P. Munroe spoke of the great advance in business and manufacturing methods forced on European countries by the war, and the danger to this country from competition without and labor troubles within, after the war, pointing to the necessity and value of work as suggested by this report.

Mr. J. I. Solomon, '93, a guest of the evening, was asked to speak and told of experiences gone through by England at the outbreak of the war upon finding many essential materials controlled by Germany, and of the benefit to England of being forced to find substitutes within her own borders.

Upon motion of Mr. Kebbon, seconded by Mr. Bradlee, it was voted:

"That a committee for mobilizing Technology resources be appointed by the chair, in accordance with the report of the preliminary committee presented by Mr. Litchfield tonight; that the committee consist of not less than twenty-five members, and that there be appointed from that number an executive committee of not less than five, with power to increase its own number, and also that of the general committee, as it may seem fit. This committee shall be empowered to adopt its own budget, and to raise funds for prosecuting its work."

Vice-President Knight, for the Executive Committee, presented the matter of nomination of standing committees, and it was voted:

"That the standing committees of the Council be nominated by the regular nominating committee of the Council, instead of by a special committee as heretofore."

The meeting adjourned to make a trip of inspection through the magnificent new mechanical and hydraulic laboratories under the guidance of Professor Miller, and the staff of the department of mechanical engineering, through whose courtesy the laboratories were open and the equipment in operation.

AN OLD FAVORITE GONE

Professor Blachstein passes away after a period of feeble health, mourned by hundreds of his old friends.

Mr. Joseph Blachstein died November 18, 1916, after but a brief absence from his work at the Institute. For some time his colleagues realized that Mr. Blachstein was far from a well man, but his conscientious devotion to his duties prevented his dropping his work for the rest he really needed. In the school year from 1915-1916 Mr. Blachstein, upon the urgent request of his physician, underwent an operation, writing at that time a very brave note which showed his doubt of the successful outcome. He recovered, however, and it seemed for some time that he was greatly improved in health; he took up his work with renewed interest which continued throughout the school year. During the past year he failed conspicuously, until about three weeks before he died, when it was impossible for him to keep up. He wrote another typical note to the Institute on his withdrawal, full of courage, yet with the uncertainty of the possibility of his early return to his exercises. It was hard for him to follow the advice of his physician, who commanded him to give up entirely, but it was beyond him to resist the power of the disease.

The following article in the *Technology Monthly* from the pen of Mr. R. E. Rogers will be appreciated wherever "Blackie" was known:

"BLACKIE"

It is said by one of the Institute Faculty who traveled last year over the country, meeting many of our graduates in the large centres, and in the lonely places, that almost invariably their first question was "And how is Blackie?" When they had found out they would remember to ask about the new buildings.

A good many of those graduates were remembering the Convocations in old Rogers a few years back, when as the room filled and the appointed hour drew near, the boys would begin to shout with concerted emphasis "Wo ist Blackie?" Then as if on a signal he would appear, shaggy gray head bent and darting from side to

side in his quick and courtly bow, eagle nose above rampant gray moustache and imperial, black eyes brilliant. And the shout would go up "Blackie ist gekommen!" The Convocation might convoke.

A certain disrepute attaches to the word "character" when it refers to a person of marked individuality. But if "character" means one, whom having once seen you could not forget, of strong and genuine personality, of picturesque and kindly exterior, unfailing good spirits, cordiality and courtesy, of originality and humor absolutely individual, forever giving of his interest and affection and receiving as he gave—then, by nearly twenty-five years of loyal and affectionate remembrance among Tech men, Mr. Blachstein was a "character!"

We knew very little of him. He was always eager to ask about our interests; he always remembered, often over long intervals, the things we were doing; he seldom forgot a name or a face. But he never talked of himself or obtruded his interest upon us. He was as modest as he was kindly. Even at the last, it is said, he did not wish the notice of his funeral to be published in advance at the Institute. We do not know of his early life, save that he was born in 1851 in Thuringia, and that when over forty he came to America and for the first time took up teaching. He was an old man when he died. But his twenty-five years of life in America, nearly all spent for us and our fathers at the Institute, must circumscribe our picture of him.

Although his originalities were perhaps the first attraction for his students, these alone could not have kept their affection. And he did keep their affection—he never missed an alumni dinner and seldom a class or athletic dinner or show Kommers; he was always asked to speak and did speak, quaintly, humorously and wisely. There is proof enough.

His very grotesques were part of his affection for the world at large. He must have loved making people smile at him and with him. His elaborate ceremonials of salutation, his trick of falling into rapid French—which I have been told was excellently pure—his little stunt, in which he took great pride, of being able to tell you the day of the week on which any date of any past year had fallen, his puns and jokes upon every subject under the sun including his pupils' names, his unfailing inquiry about your rubbers and umbrella if you had a cold, his flagrant and undeserved compliments to

you—these were no mere surface eccentricities. He bowed and smiled whether he knew you or not; he always spoke first. At his funeral the officiating clergyman said that among the large and floating population of that part of Roxbury in which he lived, hundreds who never knew his name, and whom he could not have known, had him for a bowing acquaintance, knew him for the friendly courteous gentleman he was.

It is good to think that he saw the Institute enter its larger life, that he had a last opportunity of seeing again his old and remembered pupils among the thronged alumni last June. It is good to think he could work—even for a little while—in the New Tech. But did he not deserve more than that? He served the Institute twenty-four years. He was not a scholar, he was not even a University man. But every undergraduate whom I have asked has told me that he was a faithful, enthusiastic, inspiring and uniformly successful teacher. They did learn of him, willy-nilly. It is a pity that he should have died without the promotion to which his long and faithful service—and successful if the suffrage of generations of students is to have any weight—ought to have entitled him.

It is said that at a little club of his intimates which he frequented he showed a poet's gifts in the writings he would upon occasion recite. We did not know that, but surely we might have guessed it. Even if he had never written a verse he was a poet, an artist in the relationships of life. He transcended, somehow, our curt and unexpressive American daily life. He was a figure of the old world—I had almost written of an old world romance. He wore the mustache and imperial of the Second Empire; one could almost see on his bent shoulders the shadowy fullness of the cloak of an earlier generation. His manner had a whiff of the romantic thirties. Balzac might have written him.

Even during this last year when he must have been suffering he never let us know it. He always made us smile, always left us feeling a little more at home in the world. His passing leaves us somehow, with a sense of an actual loss in the pleasant custom of the world, in its courtesy and kindness and pleasantness, in short in that laughter which is born of consideration and fellow-feeling. There are qualities some of us think which are more necessary to a teacher of young people than scholarship. Our friend—laughter-loving and dead—had many of these qualities. One can imagine

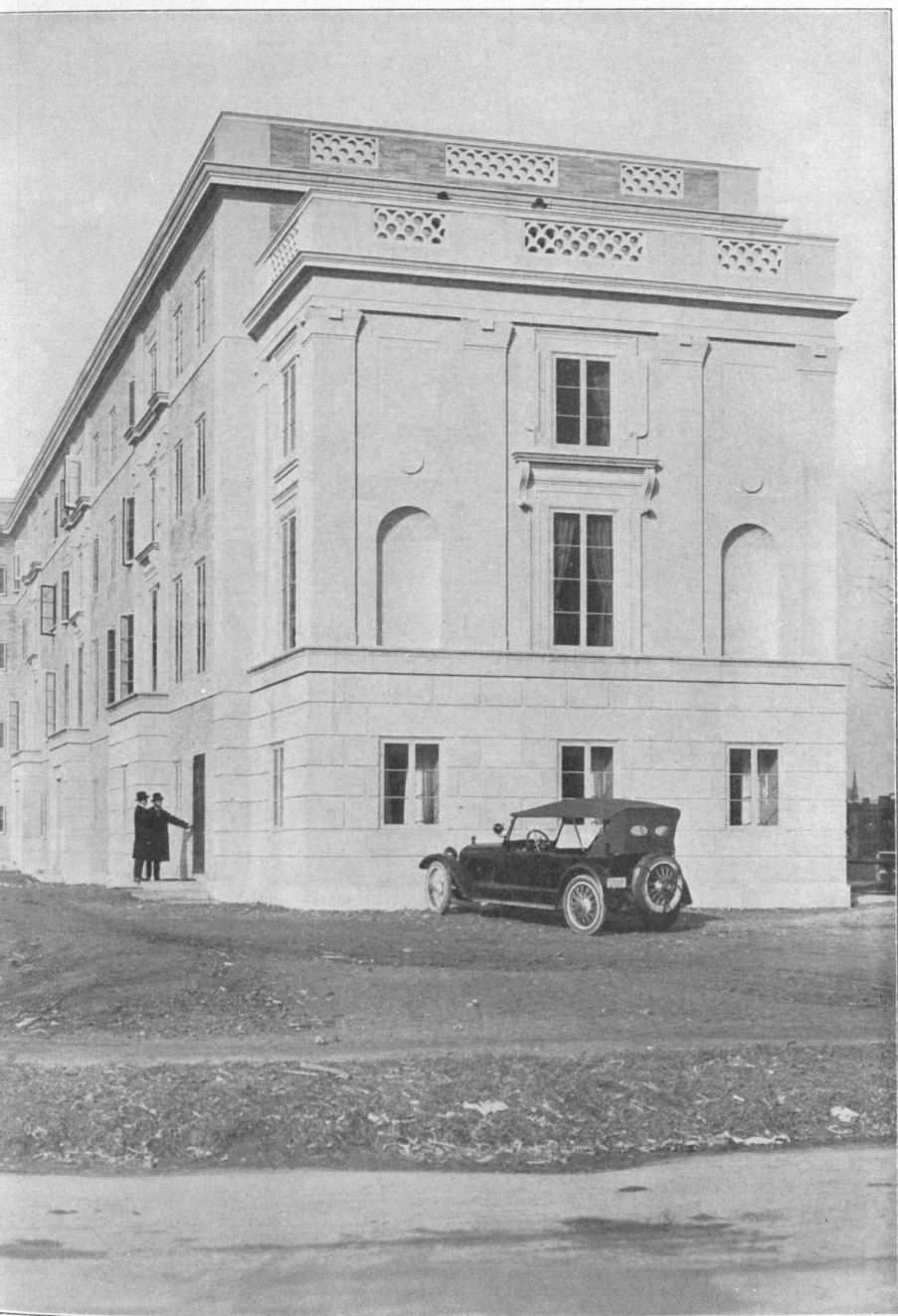
him dying, like Mercutio, with a whimsical, affectionate joke at the grief he was causing us.

He was a verrey parfit gentil knight—and we laughed at him because we loved him.

ROBERT E. ROGERS.

Committee on the Promotion of Research at the Institute

The National Research Council established by the National Academy of Sciences at the request of the President of the United States to organize the scientific resources of this country in the interest of preparedness and to foster scientific and industrial research through coöperation, and by other means, has asked all the important universities, colleges and scientific schools to appoint committees consisting of members of their faculties and boards of trustees to consider and report on methods by which research can be best promoted within the institution. President Maclaurin has appointed a committee of which he is chairman composed of representatives of the Corporation, Messrs. J. R. Freeman, '76, F. R. Hart, '89, A. D. Little, '85, C. T. Main, '76, and Jaspar Whiting, '89; of the Faculty, Professors Cross, Kennelly, Lewis, Lindgren, Noyes, Riley, Whipple, Wilson, and of the alumni, G. E. Hale, '90, and W. R. Whitney, '90. The committee dined together at the invitation of Dr. Maclaurin on November 18. Fourteen members were present. An interesting discussion of many phases of the question took place, in which all participated. The Faculty division of the committee was asked to consider the matter in detail, and to report specific recommendations as to means of promoting research at the Institute and as to the better training of our students for carrying on scientific investigations and industrial researches. The Faculty division has since held two meetings.



FRATERNITY SECTION OF NEW DORMITORY—DELTA KAPPA EPSILON



LIVING ROOM—FRATERNITY SECTION OF DORMITORY—DELTA TAU DELTA



DINING ROOM—FRATERNITY SECTION OF DORMITORY—DELTA TAU
DELTA

THE NEW DORMITORY

Description of the first dormitory unit which it is hoped will be soon followed by others. Two fraternity houses in the unit.

Since the memorable All-Technology Reunion last June, a new building has been added to the group on the Charles, constructed during the summer and occupied the first week in November, as the first dormitory erected by the Institute. This building marks the eastern extremity of the site, and thus establishes an outpost, leaving the space between it and the educational buildings for future construction. It also marks a most important step in the inner development of Institute life, for it is the forerunner of an undergraduate community which will eventually provide homes for over fifteen hundred students in buildings of a similar type—surrounding the splendid Walker Memorial Clubhouse now well advanced towards completion.

The character of the building we are considering was so closely connected with the ultimate scheme of expansion, that the determination of the style of its architecture was one of importance. The necessity of conforming to the classic spirit set forth in the educational buildings was recognized as a compelling factor. After studying models and perspective sketches, the present design was evolved and a new note was struck in dormitory composition, in harmony with the main buildings—and yet distinctive, free and original in conception and execution. Instead of turning to the Tudor-Gothic or Colonial precedents, so widely followed in the colleges of America, inspiration was obtained from Greek, Pompeian and Renaissance sources, with a composition of grace and refinement as a result.

The building stands on a piece of land two hundred and fifty feet square and follows the north and east lot lines, thus forming a right angle in plan. Two wings, four stories high, radiate west and south from a central part in the reëntrant angle which is six stories high, in the form of a tower, dominating the composition. An open three-arched loggia in the tower with flat pilasters be-

tween the openings and open balustrades above, gives a distinctly Italian character to the building which is further accentuated by a four-columned portico below. Each wing is terminated at the street line by a three-storied bay which is treated with flat pilasters, decorative niches, and an open balustrade above.

The long wall surfaces are broken up by the interposition of projecting bays marking the entrances to the individual student houses. Ornamental iron balconies when erected will be placed in the windows of these bays, and will develop a pleasant play of shadow.

Casement windows have been installed throughout, and thereby increase the attractive qualities of both the exterior and interior. The stone frames around the third floor windows are to be treated decoratively with carved ornament in low relief, as well as the spandrels between the arches in the tower loggia, and at other important spots. This carving, including that of the capitals on both columns and pilasters, has been deferred for the present, and until this work is fulfilled and the iron balconies added, the final architectural picture cannot be considered complete.

The materials, Indiana limestone and Roman brick, combine to produce a warm evanescent color, in complete sympathy with the tonal values of the main buildings.

The exterior stone walls of the entrance bays, tower portion, and of the terminations of the wings, have been rusticated to lend interest and stability to these otherwise flat surfaces.

The wall surrounding the President's new house, located in the southwest corner of the dormitory property, has been built parallel with the main façades of the dormitory, thus affording a sheltered walk entered from Ames street and the Esplanade, and leading to the dormitory entrances. A wrought iron fence surrounding the entire property with ornamental gates will give additional privacy and charm.

Turning to the interior arrangement, the suggestions made by the Alumni Committee on Student Housing have been carefully followed. The six separate sections or houses are divided one from another by fire walls and each has its individual entrance and staircase. Fraternities occupy the end sections of the two wings, and have been given accommodations for dining-room purposes and kitchen services in addition to the living-rooms.

The dormitory sections are so planned that the first floors are

devoted to single bedrooms, and the remaining floors to suites for two or three men in each. The typical suites consist of a study, dressing-room and bedroom—or sleeping porch. Ample toilet facilities are provided on each floor, and lavatories are placed in most of the single bedrooms and in the dressing-rooms. The rooms have been well furnished by the Institute, and most favorable comments have been made by students from other colleges, from Princeton and Pennsylvania, for instance, on the exceptionally comfortable accommodations afforded at Technology.

H. E. KEBBON, '12.

Augustus Lowell Honored by Tech

The name of Augustus Lowell, father of President Lowell of Harvard, has been carved in the frieze of the eastern court of Technology. Augustus Lowell was very much interested in the progress of Technology, and aided it during his life with gifts and advice. His gifts were notable at the time, particularly the electrical engineering laboratory on Clarendon street, which was the model of its day. He was also very much interested in the Lowell Institute, which his father founded, and of which his son was president.

The Medal goes to Akron!

It is interesting to know that a check-up of members of the University Club of Akron, Ohio, shows that there are more graduates of the Institute of Technology on its roll, than any other college. The number of Technology members is 38 and Cornell a close second has 34.

THE RESERVE OFFICERS' TRAINING CORPS

Practical instruction and drill is being given in military engineering—Full equipment furnished by the War department.

The article on the Reserve Officers Training Unit printed below was written by Captain Frederick B. Downing, Corps of Engineers, U. S. Army. Captain Downing is a graduate of the U. S. Military Academy, class of 1906. He comes to the Institute as assistant professor of military science and is directly in charge of the Officers Training Unit. In addition to his duties at the Institute he is actively engaged in the professional work of the army.

One of the new features of the Army Reorganization Bill (that became law on June 3, 1916) was the authorization of the Reserve Officers' Training Corps.

The object of the law in this respect was to secure through institutions of learning, by their coöperation with the War Department, a reserve of graduates sufficiently trained to perform creditably the duties of commissioned officers in the military forces of the United States.

Prior to this law, for fifty years Technology has maintained a department of military science and tactics, conducted in compliance with the Congressional act of 1862 and supplementary legislation. As a land-grant institution it has received annual appropriations from the federal government, and in return has given instruction in the mechanic arts and military science. The military training that has been provided has been loyally supported by the authorities of the Institute, but on account of existing physical conditions it has been largely confined to infantry drill and elementary instruction in infantry tactics.

In the last five or six years, in spite of the lack of an armory and of suitable ground for drill, valuable military training has been given. The Technology regiment has grown to be a creditable organization. Military training is no longer regarded as irksome drudgery by students; it has been enthusiastically supported by many of them that have been especially interested, and who by

remaining in the regiment throughout their sophomore, junior and senior years have made themselves excellent drillmasters.

During the academic year of 1915-16 the students themselves organized a volunteer engineer corps. Under the old law it was not possible to secure material assistance from the War Department in equipping this organization. There was no suitable place for engineer drills. But notwithstanding the adverse conditions, many of the students continued in the volunteer company until the end of the year, and availed themselves of such practical training in military engineering as could be obtained in sketching and bridge building.

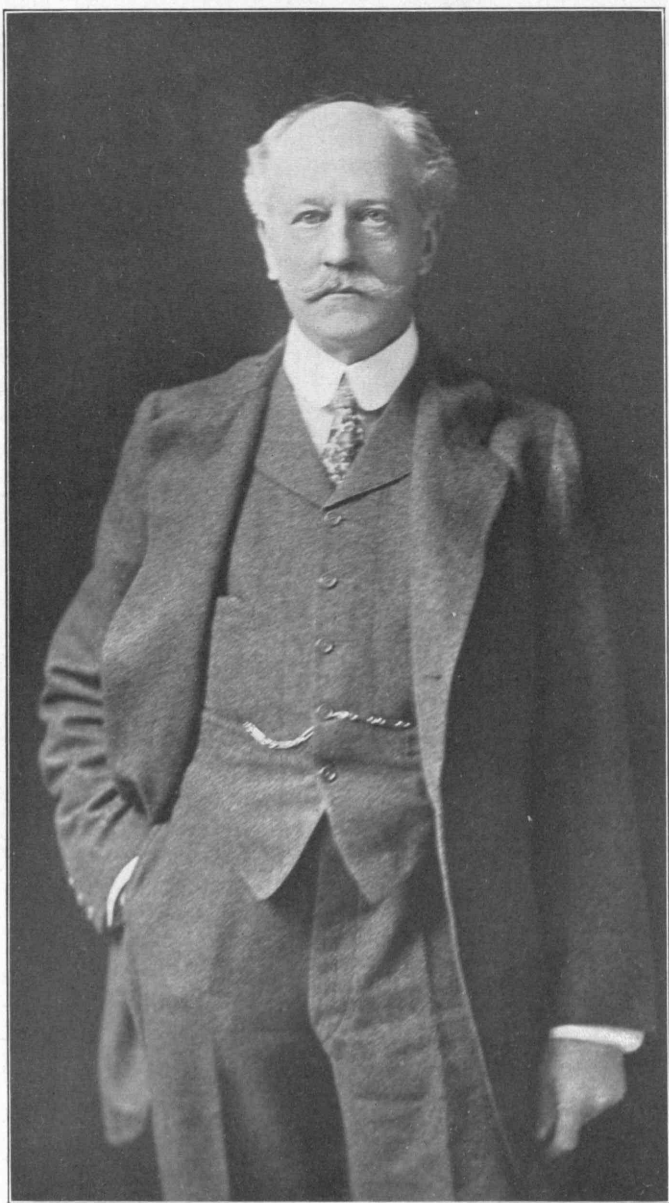
The new law provides that upon the application of any land-grant institution, units of the Reserve Officers' Training Corps may be established in that institution, conditioned upon the inclusion in the curriculum of a four years' course of military training; it authorizes the issues of arms and equipment to established units, and the payment of commutation of subsistence (which amounts to about \$85) to students in their third and fourth years in the training corps. The law also authorizes the appointment of graduates of the training corps as reserve officers of the army, and makes them eligible for commission as temporary second lieutenants of the regular army for a period of six months with pay at \$100 per month. The Secretary of War is authorized by law to prescribe standard courses for the Reserve Officers' Training Corps, and to maintain summer camps of instruction for six weeks each year; and to transport, subsist and train students in these camps.

In carrying out the provisions of the law, the War Department established standard courses of theoretical instruction requiring three hours per week of military subjects during the freshman and sophomore year, and five hours per week during the junior and senior years. Regulations have been prescribed for the establishment of training corps units for infantry, cavalry, field artillery and engineers. The effect of the War Department regulations is to encourage the establishment of a four year's course of military training; and to make it possible for students to elect this course, and upon its satisfactory completion to be graduated and commissioned in the reserve of the army.

The authorities of the Institute have not adopted the War Department courses into their curriculum, on account of the difficulties of coördinating them with those already established,

and so arranging hours of purely military instruction as to provide periods of military training that will not conflict with the established schedule of Technology. Pending the decision of the War Department on modifications of the prescribed courses that have been recommended by the President and the professor of military science, the volunteer unit of the Reserve Officers' Training Corps has been retained. He is now under the immediate supervision of an officer of the corps of engineers, who has been detailed as assistant professor of military science and tactics.

The course of military instruction now provided by the volunteer engineer unit of the Reserve Officers' Training Corps is in addition to the long established drill and training of the Technology regiment. It includes instruction by lectures and by practical work in military engineering. The company is organized as an engineer company, and has been supplied by the War Department with a complete equipment of tools. The practical work includes instruction in fortification, military bridges, reconnaissance, demolition and other important duties of military engineers. This work is supplemented by lectures on military history, and the theory and practice of military art and engineering. The time devoted to training and instruction is two hours per week. About ninety students regularly take part in the work.



PROFESSOR PERCIVAL LOWELL

PERCIVAL LOWELL

Death of the noted astronomer for many years a member of the Corporation of the Institute.

The passing on of Percival Lowell—November 12, 1916—marks the termination of relationships with the Institute of another member of a family which since the foundation of the school has manifested deep and practical interest in it. John Amory Lowell, cousin to John Lowell, Jr., who founded the Lowell Institute, and its first director, was a friend and adviser of William Barton Rogers, and while his name does not appear in the certificate of incorporation, it does find place,—that of vice-president, in the first published list of Technology's officers. He was an officer but five years, but he remained in the Corporation till his death in 1881.

Already Augustus Lowell, son of John Amory and his successor as trustee of the Lowell Institute, had been a member of the Corporation for some years, his election dating from October 8, 1873. His interest likewise and his service terminated only with his death in 1900. The son of Augustus, Percival Lowell, became a member of the Corporation in June, 1885, and was followed by his younger brother, A. Lawrence Lowell, in March, 1896. For four years, therefore, the rolls of the corporation of the M. I. T. bore the names of the father and his two sons, a group that more than any one family in the land has left its impress on modern methods of education. To all four Lowells Technology is greatly indebted for financial aid, for good business advice and for that personal service that counts even more than the other items, for one and all of these men were active in that committee work without which no great organization can succeed. The service of Percival Lowell in committee work included supervision over various departments of study and administration, mathematics, electrical engineering and physics among them, and in some earlier years a member of the auditing committee.

Percival Lowell had most admirable opportunities for a broad foundation to his education. He had early acquaintance with Europe, its languages and modes of thought, while ten years in

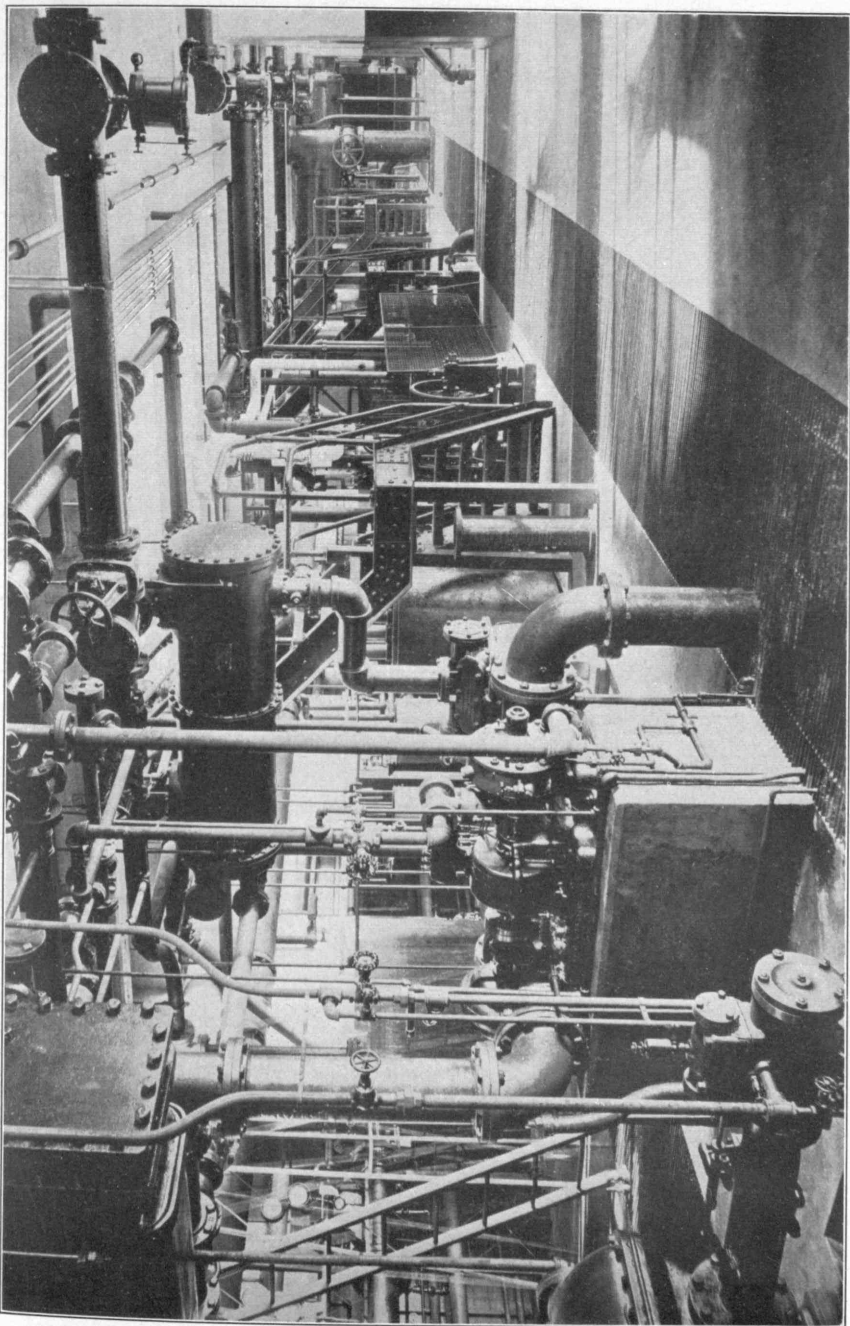
the Orient, engaged in the study of its ancient civilizations and philosophies and later years in touch with the most advanced scientific thought of American science, gave to him unusual opportunity for the selection of a field for his own abundant energies. He chose astronomy, and the world knows the result.

The impulse for this work was probably not unconnected with the Institute. A. Lawrence Rotch, a Tech graduate of '84, friend and relative of Mr. Lowell, had in 1885 begun his life's work in science by establishing the Blue Hill Meteorological Observatory. This by its flexibility and the absence of official red tape, began from its dedication its service to science and demonstrated the advantages of the personally directed, independent institution for research. Mr. Rotch early in 1891 became a member of the corporation of Technology in which Mr. Lowell was already half-a-dozen years established. The instantaneous success of Blue Hill was probably an incentive to Mr. Lowell, who had already become interested in the work of Schiaparelli, and he was impelled to take up the mantle of the Italian astronomer, and in a systematic manner confirm or refute the existence of the "canali" on Mars.

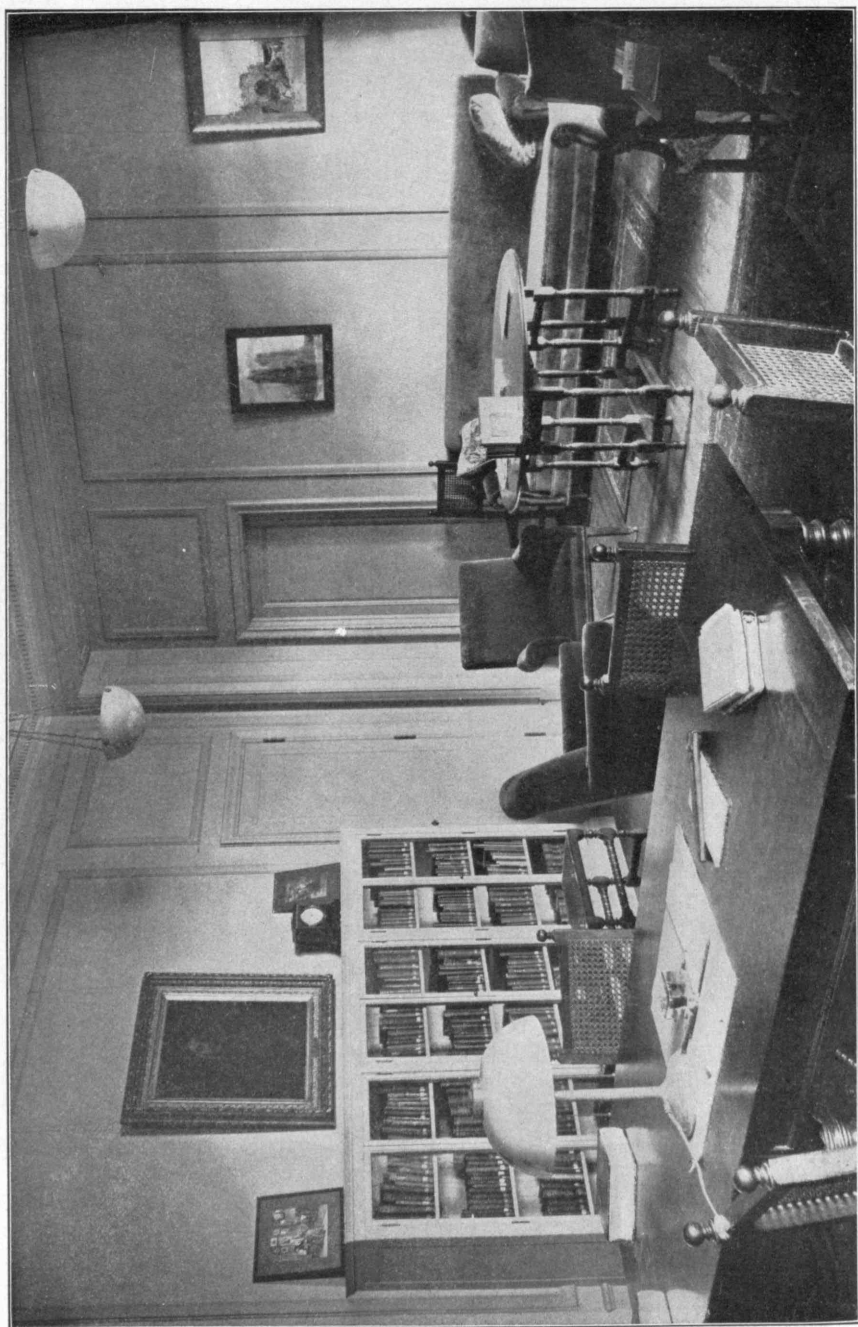
In 1894, therefore, after a very careful consideration of everything that should enter into a truly scientific undertaking in astronomy, Arizona was selected for the location and Flagstaff Observatory was established. Devotion to his specialty, which included not only Mars but the other planets, their satellites and the meteors and comets, the different components of the solar system, led later to his desire to give to others the knowledge that he had himself acquired. An obvious way to do this lay through the Institute, and in 1902 he was named non-resident professor of astronomy and in 1908 he tendered to the Institute the facilities for research afforded by his observatory.

The connection with the Institute as professor revealed to the Faculty and students a new and brilliant phase of the character of Mr. Lowell. It is doubtful if there was in his time in scientific work an individual possessing the intimate knowledge of his subjects, the magnetism, the personality, the choice of language and the happy ability to present his thoughts, that had fallen to him, and this was evidenced when he came before Faculty or student body as a speaker.

In various papers he appeared before the Society of Arts, notably at the Darwin commemoration in 1909, where he divided the



BASEMENT STEAM LABORATORY



MARGARET CHENEY ROOM

platform and the subject of the day, "Evolution," with Professor Sedgwick, and was at no disadvantage compared with the polished and easy style of Tech's great sanitation leader. A year later it was the presentation before the society of the story of the comets, in which repulsion, the pressure of sunlight and other recently acquired knowledge fell into their proper places in the cosmogony. Then again at a later date—January 30, 1913—the astronomical significance of the great pyramid of Gizeh was set forth as "the oldest and most significant astronomical observatory the world ever had."

Two series of lectures stand forth as particular events in this most brilliant period of Lowell's activities, a course in the Lowell Institute in October and November, 1906, and a special group of six for the M. I. T. students in February and March, 1909. Already a decade before he had lectured on Mars in the Lowell Institute courses, but these later presentations had the advantage of ten years' further observation and study by himself and his indefatigable assistants at his observatory. The Lowell course was so striking that the afternoon repetition of the lectures was demanded and the audiences included the most intelligent of Boston's population. The lectures to the students attracted alike the young men and the instructing staff and the few outsiders who knew of them and stand today as one of the most remarkable series of presentations that the Institute had known. They were afterwards condensed into his volume, "Evolution of Worlds."

One other helpful feature of his relations with the Institute was evidenced in frequent showings in the entrance hall of the Rogers Building, of the newest results of the work of the Lowell Observatory. Prepared at first specially for the view of Technology students they attracted so much attention that demand was made for them, and in succession the remarkable and beautiful photographs on glass have been shown in the larger cities of the country.

Percival Lowell's activities in his relations to the Institute have been important, but in truth they have been hardly more than incidental in a life filled with activity and with achievements of such character that the world has not yet had time to take cognizance of their greatness.

JOHN RITCHIE, JR.

ACTIVITIES OF THE CHRISTIAN ASSOCIATION

Its work is one of helpfulness to the new students, to the foreign students and to those in need of advice.

The Technology Christian Association exists "to supplement technical training with character building." The importance of thus supplementing technical training is attested by the testimony of the members of the National Engineering Societies in naming character first in the order of importance of fundamental qualities that make for success in engineering in their replies to the questionnaire of the Carnegie Foundation in their study of engineering schools reported in the *Engineering Record*, January 26, 1916.

The general process and an indication of its effectiveness is evidenced by the very name of the organization. In the first place it is a Technology association. It is a purely indigenous organization. It has no organic relations with any outside organizations of a similar nature. Its Advisory Board, which determines its general policies and employs the secretary, are almost entirely alumni and professors and were appointed by the President of the Institute. The work is planned by our students, for our students, and carried out by our students. In all history there has not been a more effective agency for the building of character than the Christian religion. Therefore it is a Christian association. Suffice it to say in this connection that our interpretation of Christianity is in its simplest and most fundamental terms. Finally, because organized effort is more effective than unorganized, it is an association. In passing, let me remark that in all my experience with college men I have never found such a genius for organization as exists among Technology students and this certainly seems to characterize the alumni as well.

When one begins to define character, he is confused by the number of elements which seem to need to be included. They rather group themselves into two divisions, however, which will help to explain the methods we use to develop it. In general, one may say that character is composed of right habits of thought

and right habits of action and the T. C. A. aims definitely to build into the lives of Technology students those habits of thought and those habits of action.

To develop right habits of action the T. C. A. maintains the following activities. Every spring about one hundred upper-classmen are carefully selected as advisers to freshmen. During the summer they are given the names of about four freshmen each, to whom they write and offer to be of any service possible. On their arrival at the Institute these advisers meet the freshmen, help them to register, advise them in regard to rooming places and otherwise assist them to adjust themselves comfortably in their new surroundings. During the late spring and summer another committee has been busy investigating rooming and boarding places to find and publish a list of places entirely suitable for students to live. During the opening days another group of men maintain an information bureau where all kinds of difficulties are straightened out and information given.

Each year a reception to new students is given enabling them to take the first steps in getting acquainted with each other and with those that have been here before.

The publication of the Technology Handbook or "Tech Bible" as it is familiarly known, is another important piece of student service. This year 2,500 of these leather-bound compendiums of information about Technology were printed and distributed free to students and professors. The cost of \$450 was covered by advertising secured by the students.

The fact that one out of every twelve students at Technology comes from a foreign country presents another opportunity for service, and, looking into the future international relations, it is a strategic piece of work. A special committee endeavors to help them in every possible way during their first days, and later, lectures are given them on American customs, ideals and institutions, and opportunities given them to come in contact with the best in American life.

Students are encouraged to do for others in the community. Many are secured to lead boys' classes and clubs in churches, Y. M. C. A.'s and settlements. At present twenty men are teaching English to foreigners in nearby factories at the noon hour, and in boarding houses and settlements in the evenings. While they are rendering a valuable service they are learning to know

the foreign working man in an intimate and sympathetic way that may do much in later years toward alleviating labor differences.

At the present time we are giving the students an opportunity to help alleviate the suffering in Europe by making contributions to "The Students of Europe and their Comrades in the Prison Camps of the Nations now at War." Over three hundred dollars has been raised for this cause.

We have attempted to develop right habits of thought along several different lines. The first term of each year we provide an opportunity for groups of freshmen to discuss the moral problems they are likely to meet, with an older student or instructor. This year we had thirteen such groups varying in average attendance from five to ten men each. Seven upperclassmen's groups were arranged with the following leaders and subjects:

Prof. W. T. Sedgwick,—“The Recent Growth of Altruism.”

“One of the most striking phenomena of our times is the growth of all kinds of movements for helping others. The questions to be raised and discussed are: What does this sense of the need for service mean? Whence does it arise? What are its limits? The conclusion will be reached that altruism is the very essence of Christianity.”

Prof. H. G. Pearson,—“Human Engineering.”

“A study of the forces that hinder and help us in our dealings with ourselves and with our fellowmen.”

Mr. C. H. Sutherland,—“Social Christianity.”

A discussion of the conflict between the old individualism and the new collectivism.

Mr. C. E. Turner,—“The Biological Aspects of Alcohol as Related to Industry.”

In politics and business the use of alcohol is becoming a live issue and the fact that the industrial problems involved are for the technically trained man, even more important than the proper use of the ballot.

Prof. George B. Haven,—“What Shall it Profit a Man?”

A series of discussions upon the *true value* of power in a man's life.

Prof. W. E. Wickenden,—“An Engineer’s Faith.”

The modern man of science insists that his thinking in one realm shall be consistent with his thinking in every other realm.

Prof. F. R. Kneeland,—“American Denominations.”

A study of the different denominations and a comparison of their beliefs regarding certain fundamental ideas.

These groups met from three to seven sessions each and enrolled about 70 men.

Men prominent in business and professional life are brought in to talk on fundamental issues of life. Until this year a speaker addressed the students in the Union on each Thursday noon. These “T. C. A. Talks” will probably be resumed when we get into the Walker Memorial. A special committee arranges for similar talks in the various fraternities following the dinner hour on convenient evenings.

The function of the church in developing right thinking is regarded as an important one and we very definitely attempt to relate men with the church of their denomination as soon as they arrive. Before the first Sunday of the school year the pastors of these churches are given the names of the incoming students of their particular faith. A committee, composed of a Tech student from each church, is active throughout the year in following up this work. Frequent conferences are held with these churches to consider ways and means.

Last year in recognition of the place that a man’s reading fills along this line, a project was launched called the R. R. R. (recommended recreational reading). The plan provided for the recommendation of several books each month by prominent faculty members and alumni. These were to be advertised and placed on a special shelf in the library. The books are to become the property of the Walker Memorial Library. It was a success from the start and duplicate copies had to be secured of many books, the demand for them was so great.

In many other quiet ways the association is attempting to develop an atmosphere where it will be easier for students to do right and harder for them to do wrong.

ARTHUR G. CUSHMAN.

NEWS OF ALUMNI ASSOCIATIONS

INTERMOUNTAIN TECHNOLOGY ASSOCIATION.—The Intermountain Technology Association held a dinner at the Newhouse Hotel in Salt Lake City on Tuesday, January 16. Twenty-one members and guests were present. President John H. Leavell, '07, presided and introduced the speakers of the evening, Mr. Lafayette Hanchett of the Naval Consulting Board and Dr. H. P. Kirtley, for three years a member of the Medical Reserve Corps and lately returned from five months' service on the Border.

Mr. Hanchett spoke on the general question, "How to bring about the most perfect coöperation in American industry, that will correspond in some degree to that which will later exist in Europe possibly under Government backing?" And, "What can the Institute Alumni do as trained men to meet the problems that will arise after the European War is over?"

In discussing the first question, Mr. Hanchett said that we should not overlook the fact that European nations will be facing a much bigger problem than the United States. First of all, great armies must be gradually demobilized and soldiers organized into industry, whereas our industries are already organized, and our industrial organizations will be only readjusted by change of trade relations and keenly competitive prices so that we will be confronted with the usual problem of meeting new methods with new methods. Germany will find great barriers erected in her path of reëstablishing trade connections. The Japanese have meanwhile, for example, been building ships to be ready for the trade expansion to follow the war. They have also been developing the toy industry, and we have been developing our own dye works and our own potash. The struggle will be that of the hungry man driven by extremity against the well-fed man and it is possible that the former may outstrip the latter.

Our own powers of invention and initiative will be of greater service than imitative coöperation. Our first duty in mobilizing our industries is to get correct information through organized trade associations and educate our people as to their needs.

Nationally, five things will become prominent in meeting these problems:

- (a) The restriction of immigration;
- (b) A subsidized merchant marine;
- (c) A policy of "live and let live" with the railroads;
- (d) Tariff commission;
- (e) Strengthening of the military arm, the most important of all.

We are moving, thinking and discussing, but so far we have not developed a leader of capacity and foresight who will assume the burden of preparing and organizing our great material resources, mines, oil, coal and farms, etc., into perfect coöperation. The Naval Consulting Board have taken an inventory of the facilities of our country for turning out munitions. Broad gauged, patriotic men like Henry Wise Wood, Saunders, and Schwab have been public-spirited enough to volunteer their time and the facilities at their disposal to awaken the country to a consciousness of the need of preparedness, but the present frame of mind appears to be to "Let George do it." What kind of men are we? There is a great need for skilled, efficient men in public offices, and by assuming these duties we set the example for others to follow. Let us take a reliable inventory of ourselves and our powers, and for Tech men this means a reliable inventory of brains.

Dr. Kirtley spoke of his experiences in the Field Hospital near Nogales, Ariz., and of the routine life and organization of the army. He emphasized the need of strengthening the army, for if we don't, the next war we get into we are "going to be licked." He very strongly advocated universal military training as being the only way to strengthen the military arm of the Government.—*W. H. Trask, Jr., '06, Secretary-Treasurer, University Club, Salt Lake City, Utah.*

TECHNOLOGY CLUB OF NORTHERN OHIO.—The program for a grand autumn field day and fun fest offered such a variety of interest that most of the members of the club found it irresistible and Tech men from north, east, south and west broke all former records to get to the center of the rubber world for a big time in the open air and for a big feed and song fest at Gaylord's Inn, a local tavern, Saturday, October 28.

Flip Fleming, a 1916 graduate, was detailed to perfect arrangements and he and his committee outdid themselves to make the

day one of the brightest and best in the annals of this very live organization.

Mr. Charles W. Eaton, '85, representative of the Technology Club of Northern Ohio on the Alumni Council, expressed regret of his inability to attend the outing and sent to the organization from his home in Haverhill, Mass., a check to be used to help make the day bigger, busier and better. As a result of this loyal action, a silver loving cup was purchased which will be known as the Eaton Trophy and will be used as a trophy to be competed for by Cleveland and Akron Tech men. Such competition will take the combination form of athletic events and per cent. of attendance.

The athletic events were run off on schedule without a hitch amidst great enthusiasm and with many close finishes.

In the three-legged race C. R. Johnson and R. A. D. Preston ran away from a large field of starters and scored the first points for Akron. A. W. Spicer and Arch Eicher, representing Cleveland, came in second. The winning couple received two beautiful rag dolls as prizes.

The sack race was won by Arch Eicher with Durkee as second. Eicher mastered the technique of the contest very quickly and romped away to the front with ease, winning the salubrious tin horn which was offered for the event.

In the old timers' race, the old and fat boys put up a game and came down the course strung out in one long line neck and neck, no one assuming any advantage over the others. Unable to resist the temptation of grasping the large hand-painted baby rattle which went to the winner, Peabody broke away in the last ten yards and rolled over the line ahead of A. L. Patrick from Elyria.

Chinese wrestling was a new game imported for the occasion. The opposing contestants lay on their stomachs blindfolded, holding a barrel stave by opposite ends. A heavy club of wadded newspapers is placed in the free hand and the two make alternate attempts at beating each other's brains out. After many terrific combats Joe Dunlap was determined the winner with one less black eye than normal. Don Stevens being runner up with the loss of only one wisdom tooth.

In the egg race A. T. Hopkins assisted by a relay of younger friends scrambled into home stretch a winner by seven yards. He was donated, in fact showered, with all the spare eggs.

The barrel stave wrangle resembled nothing so much as snow

shoeing in Egypt. Several bad spills were in order but Jim Hale by steady and consistent effort plodded into first place and crossed the line a winner.

Don Stevens won the automobile race by default.

The booze fight was called off on account of the modesty of the contestants. Each one wished to yield the other the palm, both having recently hit the "Sunday Sawdust Trail."

The hit of the day was the aerial "cock fight." A large boom was elevated on two horses about six feet off the ground. Two contestants mounted the boom facing each other with a feather pillow in their hands, the object of the event being for one of the contestants to knock the other off his perch. Many ludicrous situations developed and some grand and glorious tumbles occurred. Joe Dunlap proved the best equestrienne and was returned victor over a bloody field.

At the dinner in the evening Tech songs were alternated with many original sketches and cheers. A special program drawn for the occasion was used. The nominating committee elected A. T. Hopkins to succeed P. W. Litchfield as Main Gink of the club and A. W. Spicer to succeed Don Stevens as Sacred Scribe. Plans for the coming meeting of the Technology Clubs Associated in Cleveland and Akron were discussed.

Among those who were present at dinner were the following: H. S. Alexander, '11; E. C. Gagnon, '16; F. R. Peabody, '96; G. W. Sherman, '94; Ed. B. Cook, '01; Wm. N. Drew, '10; B. H. Hale, '14; A. D. Wheeler, Jr., '15; J. A. Christie, '09; C. R. Johnson, '11; A. W. Spicer, '13; L. C. Marble, '96; R. A. D. Preston, '10; P. W. Litchfield, '96; A. W. Carpenter, '13; Hal Gray, '16; F. C. Moore, '91; A. D. Hatfield, '96; C. H. Durkee, '15; G. B. Greenough, '14; M. H. Rood, '16; J. B. Ingle, '16; Chas. G. Norton, '15; J. B. Carr, '16; J. H. Dunlap, '11; K. B. Kilborn, '11; G. W. Bowers, '09; F. H. Adams, '88; W. E. Kimball, '15; F. W. Witherell, '00; A. L. Patrick, '94; "Flip" Fleming, '16; W. R. Keith, '14; F. W. Claffin, '01; R. W. Pratt, '98; E. A. Weissbach, '16; J. E. Hale, '08; A. M. Eicher, '12; W. S. Wolfe, '12; C. P. Monto, '10; Don Stevens, '11; A. T. Hopkins, '97.—*Don Stevens, '11, Secretary, Goodyear Tire & Rubber Co., Akron, Ohio.*

TECHNOLOGY CLUB OF THE MERRIMACK VALLEY.—A special reunion of the club members was held on Wednesday evening, December 13, 1916, at the Merrimack Valley Country Club,

Lawrence, Mass. Twenty men were present. Dinner was served at 7.30 o'clock. President R. F. Pickels, '87, presided. After the dinner, Mr. I. W. Litchfield, '85, of the Institute spoke on various matters of interest. He exhibited some fine lantern slides showing the stunts of the various classes at Nantasket Beach last June, also some views of the new dormitories. He later spoke in detail of the plans as projected for the coöperation of the Institute and the alumni with the National Government along preparedness lines.—*John A. Collins, Jr., '97, Secretary, 67 Thorndyke Street, Lawrence, Mass.*

THE TECHNOLOGY CLUB OF ROCHESTER.—At the regular annual meeting of the club, which took place October 23, 1916, the following officers were elected for the year 1916-17: President, Adolph Lomb, '92; first vice-president, J. C. Dryer, '99; second vice-president, J. P. Barnes, '05; secretary-treasurer, W. S. Lucey, '07; member of the executive committee for three years, E. M. Hawkins, '97. Other members of the executive committee are H. H. Tozier, '96, and F. W. Lovejoy, '94.—*W. S. Lucey, '07, Secretary-Treasurer, Kodak Park Works, Rochester, N. Y.*

THE INDIANA ASSOCIATION, M. I. T.—The association gave a farewell banquet to Dr. Severance Burrage, '92, at the German House, November 3. The dinner was well attended and great regret at losing such a good member was expressed by all. Dr. Burrage goes to Boston to take up special research work. He formerly was a professor in Purdue University, and later was connected with the Eli Lilly & Co.

Kurt Vonnegut, '08, was toastmaster of the evening and William Wall, '96, the principal speaker.

Our monthly luncheons are still the meeting place of Tech men, and frequent guests enliven the meetings.—*W. B. Parker, '88, Secretary, 805 Board of Trade Bldg., Indianapolis, Ind.*

NORTHWESTERN ASSOCIATION OF M. I. T.—The Northwestern association held a smoker on election night, November 7, 1916, to receive the returns of the election, and which turned out to be a very enjoyable affair. As the returns came in, a straw vote was taken which was one-sided in the ratio of 39 to 7. The joy of the evening, however, was dispelled on the following day.

On November 28, another smoker was held in commemoration of the members of the association who served on the border as members of the National Guard. Thirteen of our members spent several months at the border and most of them were present at the smoker. Lieut. Kenneth Lockett, '02, related an interesting account of the operations of his command—Battery "D," First Illinois Field Artillery—and his account was at least partially verified by E. Ridsdale Ellis, '09, and other privates of the same command.

Quartermaster Tomlinson, '12, of the engineers' corps described the exciting adventures of this detachment in surveying the route of march of the so-called American Army.

Ellis described the aesthetics of the process of burying dead horses, and Lieut. Harold Lockett described the method in vogue for watering the animals. It seems that the water supply is located several miles from camp, and the process is to lead the horses in double file from the camp to the watering place; this process requires practically a full day, by which time the first horse watered is famished for another drink. It is not related how they got out of this predicament.—*H. S. Pardee, '09, Secretary-Treasurer, 111 W. Washington Street, Chicago, Ill.*

DAVID A. GREGG

To all who had the privilege of knowing this gentle man of God socially or in the conduct of business, there comes a sense of personal loss, a feeling that something beautiful has passed from earth. On the second hour of the morning of September 16, 1916, he entered into that rest he has so longed for through so many months of failing health.

About thirty-six years ago there appeared in the pages of the *American Architect*, some drawings signed "D. A. G." which were marvels of simple, direct architectural pen drawings, and a revelation to all draughtsmen; from that time on his work was eagerly watched for by every draughtsman, and his services sought by architects all over the land, whenever they wished to win a competition or present their work in a most attractive manner. An artist and a poet, he beautified everything he touched. One could see the most banal design, under his magic touch, grow into a thing of beauty. So conscientious was he that no matter how unpromising the material might be, he would be devoted to it, and study it, making numerous experiments as to the best possible point of view, light and shadow, of line, and quality of rendering, till he was satisfied that he had exhausted its possibilities. Then there would emerge from his hand a clean, clear, simple, charming drawing, thoroughly characteristic of the man. One would feel that only a sweet, clean gentleman could produce such a drawing, and the author of the design would be astonished at the unsuspected merit of his work. So he had come to be recognized as a sort of magician, a real artist who could by his personality "render" to the utmost limit, and with such an apparent simplicity, alike the works of all degrees of merit, of the just and the unjust, all receiving justice, and more! In a few years he had revolutionized architectural rendering in this country, and may, in fact, be said to be the father of architectural rendering with us.

For more than twenty years he was an instructor at the Massachusetts Institute of Technology, only relinquishing his teaching a few years ago because of failing strength. The many students who were fortunate enough to have his help will venerate

his memory. Those who were intimate could tell of his many acts of charity, and of his rescue work among the "down-and-outs," the lowly and the needy. And all this work, these marvelous works of art, these deeds of charity and brotherly love, were so quietly done, with such an extreme modesty, such a charming simplicity, that they were unnoticed amid the blare of trumpets of these times of ours. David A. Gregg, a simple, modest, sweet, gentle man, upon whose like we may never look again.—J. A. SCHWEINFURTH, *Boston Transcript*, September 20, 1916.

Mining Summer School

Professor Locke of the mining department, with a party of seven students, made a summer school trip after the Reunion last June.

The party was one of the most novel summer school parties in the record of the Institute, in that it consisted of six Chinese students and one American student. In recent years the department summer schools have been somewhat on the decline, because in the opinion of the department, it is better for men to spend the whole summer in practical work in mining or metallurgy, instead of spending three or four weeks in visiting mines and metallurgical plants. Through the kindness of alumni and friends of the Institute an employment system has been developed by Professor Locke, whereby all students who desire practical work during the summer have been placed in positions. However, the placing of Chinese students is difficult, and, therefore, the summer school seems to be necessary for them.

The party first visited the mine and magnetic concentrator of the Empire Iron & Steel Company at Mt. Hope, N. J. From there a jump was made to Niagara Falls, where the Acheson graphite plant and the hydroelectric plant were visited and an opportunity given the students to see the Falls. A long jump brought the party next to Duluth. In that city was seen the plants of the Minnesota Steel Company, including coke department, blast furnaces, open hearth furnaces and rolling mill, and the Carbolite plant for the manufacture of calcium carbide in electric furnaces. From Duluth a tour was made out on the Mesabi iron range, to study the various forms of open pit and

underground mining of iron ores, and of iron ore washing. The next stop was at Ironwood, Michigan, where deep mines exist, and where the mining methods are somewhat different from those of the Mesabi district. The last stop was at Houghton, Michigan, where a week was spent studying copper mining, milling and smelting.

The party left Boston on June 19, and broke up at Houghton, on July 7.

The thanks of the party are due to the alumni and to people in charge of the plants visited. Everywhere a cordial welcome was received and fullest opportunity given to see the operations.

MISCELLANEOUS CLIPPINGS

Harvard will receive approximately \$22,000,000 on the death of the last annuitant under the will of Gordon McKay to carry on the work of **McKay Fund** applied science provided for by the testator, according to an estimate made by the surviving trustees in an answer filed in the Supreme Court in a suit by the president and fellows of Harvard for leave to transfer the McKay millions to the Institute of Technology.

The trustees are Frank T. Stanley and George E. Gilbert. The McKay trusts were accepted in 1904 by Harvard. Since then, however, Harvard has felt that the Institute of Technology is better equipped to carry on the work and better results may be obtained, not only by reason of the improved facilities but by assembling a large body of students pursuing the same lines of study.

The trustees oppose any transfer of the fund, declaring that the testator was prompted by a purpose to build a strong and efficient department of engineering education and research at Harvard University under charge of a Harvard faculty and under the exclusive jurisdiction of the university.

Harvard has been paid already, \$2,447,261.12 by the trustees, who contend that the \$22,000,000 which will be turned over finally will yield an income that will be sufficient to erect buildings and establish the plant that Mr. McKay had in mind at the time he executed his will.

The validity of a transfer by Harvard to Technology under the terms of the will will be determined soon by the full bench of the Supreme Court. —*Globe*, Boston.

Professor Arthur A. Noyes, of the Massachusetts Institute of Technology and one of the chemical professors appointed by the National Academy of Science to carry on investigations in behalf of the Government's preparedness program, has just given the Solons at Washington the best tip **Will the Advice Be Taken?** as to the fundamentals of military preparedness that they have yet received. It is so simple, however, and so easy to carry out, that judging from the behavior of the Congress and the War and Navy Departments after similar suggestions made by laymen as to forehandedness in the past, it will be calmly ignored with that complacency that is one of our besetting sins. Speaking as a chemist and detailing the difficulty of getting enough nitrates in any other way than by importing the Chilian saltpeter, Professor Noyes advocates the spending of about \$15,000,000 for three million

tons of a supply of saltpeter which, if possessed by us, would make us free from the menace of the probable cutting off of our supplies in war times. The nitrates would "keep" and the purchase, he holds, would be a forehanded measure worth while and quite economical at that. But one can already hear the thing negated at Washington, since it is too clean-cut a proposition and lacks the fantasy or the log-rolling aspect that always unlocks the treasury doors. But why not take Professor Noyes's advice? It is just to get such tips that the assistance of such men was invited by the administration.—*Public Ledger*, Philadelphia.

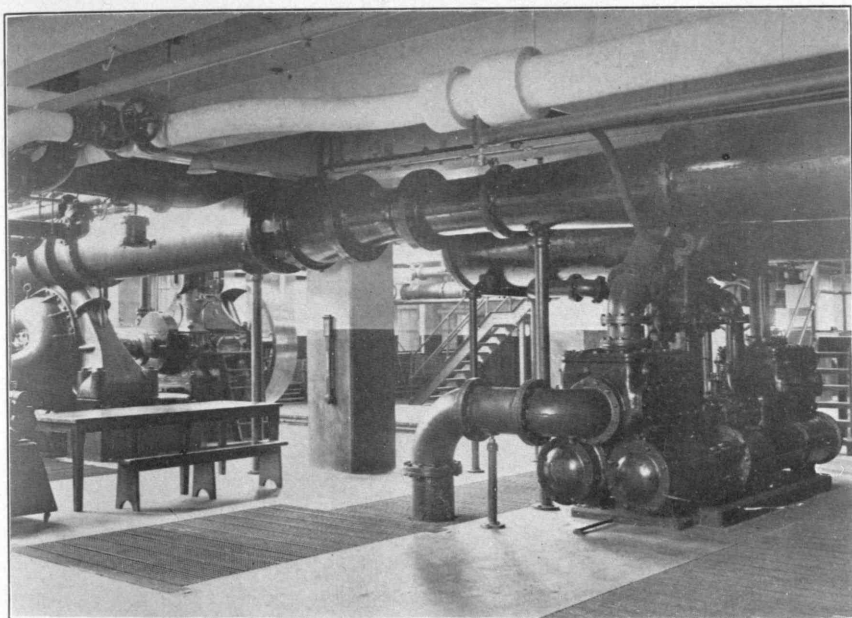
The real import of President Maclaurin's name, Smith, for the anonymous donor of what now means five millions, is becoming to be known in educational circles. The S—h represents mystery, of course, and every one knows that M. I. T. is the symbol of the Institute. sMITH is, therefore, only the addition of mystery to Tech. And President Maclaurin said the other evening at a dinner that within the week he had escorted Mr. Smith about the Institute and he had seen the laboratories and felt that his investment was a good one.—*Evening Record*, Boston.

The Massachusetts Institute of Technology is ending a fortunate year. It has raised \$1,500,000, which brings in \$2,500,000 more from "Mr. Smith." It has successfully moved from its home of half a century and has taken up its work again in its new buildings on the Cambridge shore of the Charles river basin without any breaks.

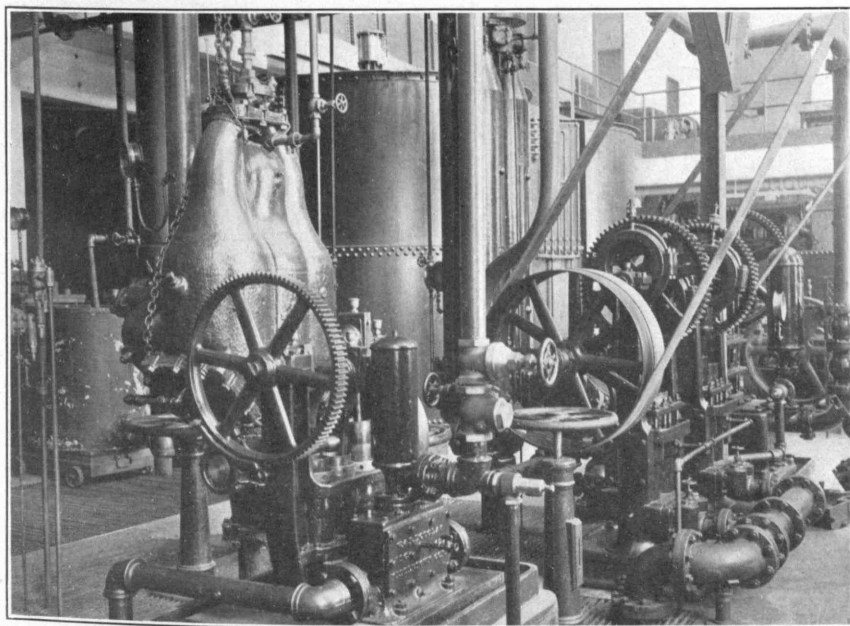
Having the buildings in condition for use President Maclaurin has this year devoted much of his attention to the establishment of an adequate endowment fund, and although very successful when measured by the usual standards, Technology is so large and laboratory methods so great in their demands that he by no means considers his task completed.

The most remarkable feature of the year was the offer by the anonymous "Mr. Smith," who in an announcement made at the great telephone dinner during the dedicatory exercises in June said he was ready to cover any other man's gift of three dollars with one of five dollars. The only conditions to "Mr. Smith's" offer were that the amount given by him would not exceed \$2,500,000 and that the time limit would be December 31, 1916. The Institute has secured the gifts of \$1,500,000 necessary to gain his offered maximum, and the two amounts together make an even \$4,000,000.

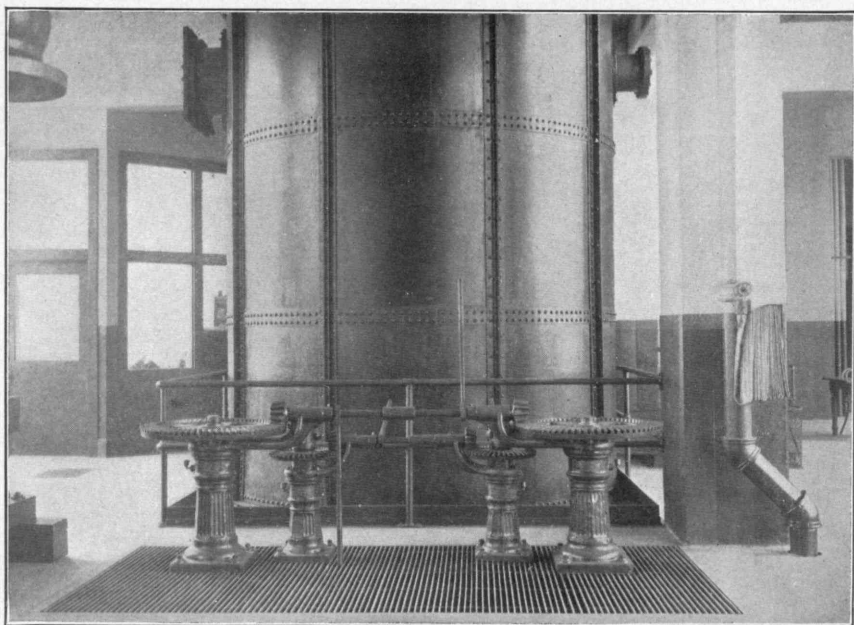
In addition there have been a goodly number of other gifts—one of \$300,000 for the establishment of the new school of chemical engineering practice, while much in the way of apparatus and machinery has been presented to the Institute.—*Evening Globe*, New York, December, 1916.



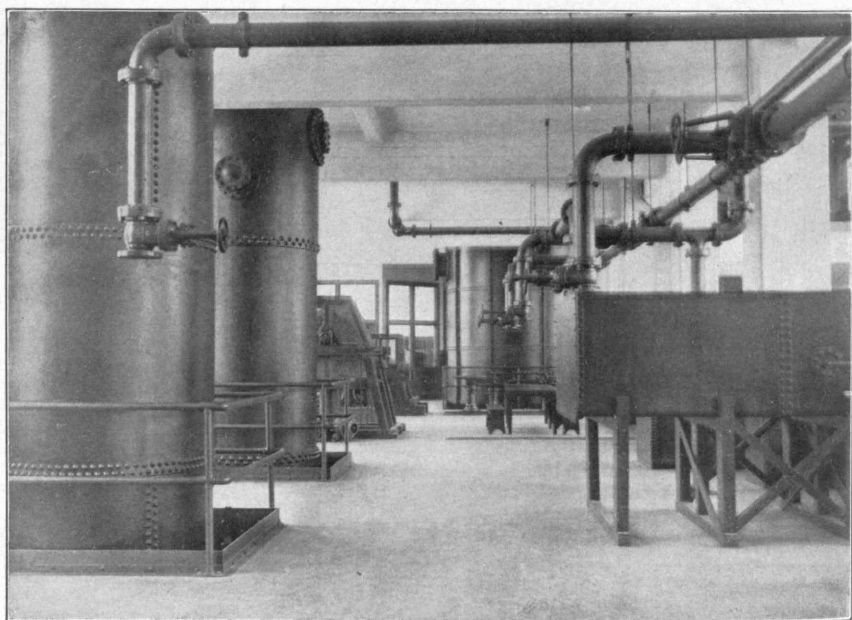
30" VENTURI METER COMBINED AIR AND CIRCULATING PUMP FOR
LARGE SURFACE CONDENSER



POWER PUMPS—HYDRAULIC LABORATORY



GATES FOR TURBINE—HYDRAULIC LABORATORY



PRESSURE TANKS, PELTON WHEELS, AND WEIR BOXES—HYDRAULIC LABORATORY

When the average college man goes to work after graduation in a city where his parents do not reside it usually takes him two or three years of

Dormitories at Last

experience with various living quarters and various costs of rental to make him appreciate to the full the advantages which his college dormitories provided at a price far less than he must pay to secure anything like as good quarters in the city. But when the two hundred Tech students who had been assigned rooms in the Institute's first dormitory on the Charles moved into the new building which was opened to receive them last night it is fair to assume that they entered with more than the usual amount of youthful gratitude. For they have been living, let it be known, in temporary quarters provided for them in large halls of that other Technology structure—the main building—which is not at all designed for sleeping or bathing or anything else but the regular work of the laboratory and the recitation-room. It must have been quite a sight to see those two hundred students living together as though in a barrack hastily fitted to meet a need created by an American war. But it is altogether a more permanent matter of satisfaction that Technology, which has been so long without dormitories, whether in Boston or Cambridge, should now have opened the first of those buildings in which it will provide good living quarters ultimately for all of its students under the most approved conditions and in the most fitting surrounding.—*Boston Transcript*, November 7, 1916.

One of the most generous givers to American universities is "Mr. Smith," address unknown. All attempts to discover his identity have failed.

Anonymous Mr. Smith

A magnificent group of modern buildings, with an endowment of several million dollars, at the new home of the Massachusetts Institute of Technology, across the river from the old site, form his latest contribution to learning.

At the time of the Tech celebration last June this Mr. Smith offered the institution five dollars for every three dollars raised by its friends, up to \$2,500,000. The incentive brought money in so quickly that \$1,500,000 was supplied within five months, and M. I. T. had its \$4,000,000 as a Christmas present.

There must be pleasure for this man, whoever he is, in watching the comments throughout the country upon his generosity—provided he is not so modest that he refuses to employ a press clipping bureau. The Massachusetts engineering school is one of the most useful educational establishments in the United States. Mr. Smith is, in helping it, contributing to the advancement of scientific study throughout the country.—*Post Standard*, Syracuse, N. Y.

Among the many enormous private benefactions of the past year the most notable in many ways was a gift made to the Massachusetts Institute of Technology. Some man, whose name is carefully disguised under the pseudonym of "Mr. Smith," at the "Tech" celebration last June offered that institution \$2,500,000, provided other friends would collectively raise the sum of \$1,500,000, so as to make the whole endowment an even \$4,000,000. The needed million and a half was raised and Mr. Smith, still keeping his identity a secret, made good on his promise. Thus the foremost technical school of the country enters the new year with an endowment of \$4,000,000 to add to its other resources and thus to do its great work even better in the future.

In all of the published stories there appears this statement, that "no clue to the identity of Mr. Smith has ever been obtained," and this is the matter which differentiates this great gift from other large donations rivaling or exceeding it in amount, great as is the amount. It is four times the sum which was contributed by an English scientist in order to embalm his name and his memory for all time in the Smithsonian Institution at Washington. Yet this donor prefers to remain modestly in the background and do his good work without the embarrassment of public recognition of himself as an eminent philanthropist.—*The Post*, Seattle, Wash.

"Mr. Smith" is one of the most generous of recent givers to good causes. Nobody, outside the inner circles at the Massachusetts Institute of Technology, knows who he really is—his name is not Mr. Smith apparently—but his liberal benefaction has been published broadcast. He offered Tech at the time of its celebration last June five dollars for every three that other donors might give it, up to \$2,500,000. Tech has so many good friends that \$1,500,000 was quickly supplied by them, and the institution now has four million dollars more than it had a few months ago.

"No clew to the identity of Mr. Smith has ever been obtained," it is said. Nevertheless, the community, and the whole country, will offer him sincere thanks. He has contributed to one of the most useful educational establishments in the United States, and we are all grateful accordingly.

In its new home on the Cambridge side of the Charles river, Technology faces the future with new confidence. It has a fine site, a stately group of modern buildings, and an endowment that many another institution would rejoice to possess.—*Journal*, Providence, R. I.

To how many hundreds of thousands of Americans is the name of Elihu Thomson even known, or if known does it connote anything more than some vague notion of science or invention? In a popular referendum where, say, the twelve most "famous" or "greatest" men in the country were to be selected, how many hundreds of thousands, how many thousands, of ballots, would he

receive? The quiet, fruitful labors of men of science pass unnoticed by the general public in every nation. Elihu Thomson, English by birth, is an American citizen of whom the United States will boast hereafter. He is of the minds, few in every generation, that produce a great and lasting effect upon national welfare and industrial progress, that fructify civilization by the originality of their thought and their scientific achievement.

Only the other day Mr. Thomson, who wears modestly the laurels of we don't know how many native and foreign societies, received the medal of the Royal Society of London. On Friday night the Fritz medal was given to him. President Maclaurin of the *Massachusetts Institute of Technology*, of the corporation of which Mr. Thomson is a member, mentioned his five hundred-odd patents, "a large number of them embodying principles so wide in their application that they might almost be classed as physical laws," his master discovery of electric welding, "one of the great inventions of the last generation," and so on. Greater than the work, though, is the man; and not merely by the number and brilliance of his inventions, not merely because of his contributions to electrical engineering, the applied science perhaps most characteristic of this age, is Elihu Thomson great. He has not been content to dwell apart in that region of creative imagination which is the mathematician's, the astronomer's. The fact, uncommon, and one would have thought all but impossible, in this apotheosis of specialization, that his scientific interest and knowledge have the widest scope and range, has not engrossed him and confined him to the cultivation of his own powers. In his youth he was a teacher in the Central High School of Philadelphia. He has not ceased to teach, and more productively than he could hope to do in a university. In President Maclaurin's pondered estimation of the man this trait and habit are among the most significant:

"Throughout his life he has not only done great things himself, but shown an intense desire to help all who are struggling earnestly with scientific problems. He has proved an inspiration to an ever widening circle of engineers and others who have intrusted him with their secrets and sought his help in overcoming their difficulties. They have done this, knowing that they had only to ask in order to get the full benefit of his imagination and his power, and that they need have no misgivings that he would take any advantage of their confidence or any credit for their work, for he has no touch of selfishness."

Thus by helpfulness to others as well as by his own labors, he furthers that scientific research, the economic necessity and value of which the war is impressing upon this country, laggard before it in spite of the shining example of Germany.

As we take leave of this honor to America, we like to think of him, as

President MacLaurin let us see him, in his "laboratory built right into his house and an integral part of it," a man from whose mind "probably thoughts on scientific problems are never wholly absent," an "unselfish, generous, well-trained, well-rounded, well-balanced man of science."—*Times*, New York.

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NEWS FROM THE CLASSES

1868.

ROBERT H. RICHARDS, *Sec.*, 32 Eliot Street, Jamaica Plain, Mass.

The class secretary is still somewhat active in professional matters. He made three professional trips last summer to New Jersey, to Illinois, and to Kansas, and believes that he is still able to do a piece of work. Barring the usual colds his family has been well.

On the field day the class did not get together as they usually do and intend to do.

At the annual dinner in January, the class was represented by Eben Stevens and Bob Richards, and the brother of the latter, Gen. John T. Richards of Maine, was present as invited guest.

At the recent meeting of the Mining and Metallurgical Society of America, W. R. Ingalls, Julius Susmann, and R. H. Richards were present and a number of other Tech men, the list of whom has been mislaid, making a very large representation of Technology.

1870.

CHARLES R. CROSS, *Sec.*, Mass. Inst. of Tech., Cambridge, Mass.

It is stated in *Science* that it is planned to erect at the University of Vermont a memorial to the late Professor N. Frederick Merrill of this class, the matter being in charge of E. C. Jacobs, M. I. T. '96, professor of chemistry in that institution.

Charles Ellery Avery of this class died at Littleton, Mass., November 14, 1916, aged sixty-eight years. He was buried in the Mount Wollaston Cemetery at Quincy.

Mr. Avery was a special student in chemistry at the Institute in 1868-'69 giving substantially all his time to work in the chemical laboratories. He was devoted to his chosen science and showed evidence of much inventiveness even thus early in his scientific career. The writer remembers an ingenious device by which he produced a highly luminous sodium, or barium flame, for use with the spectroscope by throwing the flame of a Bunsen burner across the spray which rose from a capsule containing a solution of a salt of one of these elements when in ebullition.

The writer is indebted to Alan A. Clafin, '94, for the following sketch of Mr. Avery's life.

"Mr. Avery, after he left the Institute, taught for awhile at the Massachusetts College of Pharmacy, and then became associated with S. P. Sharples in analytical and consulting work. While with Mr. Sharples he worked out his process for the commercial manu-

facture of lactic acid by the fermentation of carbohydrates. His process, practically unchanged, is the basis of the large lactic acid industry. His first patent on the process was granted in 1881.

"Other important professional work of Mr. Avery was his investigation of the oxidation of the coloring matter of logwood and the application of nitrite of soda for this purpose; also his researches on the oxidation of petroleum oils, which latter were never published.

"Mr. Avery was never a robust man and after the manufacture of lactic acid was established commercially, he lived for many years in Florida. Later he traveled and spent considerable time in the West Indies, and also lived for awhile in the Island of Jersey. All the last years of his life he passed in retirement in the town of Littleton, Mass.

"He never married and is survived by his sister, Mrs. Adelaide Avery Clafin.

"Throughout his life he was an earnest student of chemistry and general science, and possessed an extremely original mind, always bringing to an investigation a novel point of view as well as an encyclopedic fund of information.

"While an invalid in Florida he spent much time observing the flight of birds and thirty years ago predicted the aëroplane almost as we know it today."

Dr. Edward M. Buckingham died suddenly, December 23, 1916, aged sixty-nine years, and Mr. Andrew M. Ritchie, December 25, 1916. Fuller notice of both is reserved until later.

1875.

E. A. W. HAMMATT, *Sec.*, South Orleans, Mass.

The only class news which has come to my attention is the death of our classmates, E. H. Gammans, Thomas H. Bakewell and C. O. Bradford.

Bradford died May 5, 1916.

Gammans died in the early summer but the secretary has received no particulars of his death.

Bakewell died January 9, 1917, at his home in Pittsburgh, in his sixty-fifth year. He was at one time prominent among railroad builders, and was at one time a member of the firm of Bakewell and Mullins (sheet metal work). He was one of the founders of the Duquesne Steel Foundry Company, and became secretary of the concern, and at the time of his death he held the office of vice-president and treasurer. He is survived by his widow, four sons and five grandchildren.

The annual meeting of the class will be held early in March, due notice of date, place and time will be sent to members.—The secretary has recently received word that our classmate Knapp, from whom nothing has been heard for many years, has had a shock of paralysis affecting his right arm and leg.

1876.

JOHN R. FREEMAN, *Sec.*, Grosvenor Building, Providence, R. I.

Prior to the Reunion, the secretary of the class of '76 had corresponded diligently with the surviving members, inviting them to spend a week end at his home and go on a joy ride around Narragansett Bay, including a clambake on its shores.

The class is one of the most widely scattered and forty years is a long time since graduation. Several who had fully intended making a long journey to be present at the New Tech festivities were disappointed at the last moment, but out of what each believes "the finest class ever" there were present Mr. and Mrs. Copeland, Mr. and Mrs. Main, Mr. Hodgdon and his daughter, Nancy, Mr. and Mrs. T. W. Baldwin, Mr. H. B. Wood, Mr. F. E. Galloupe, Mr. E. E. Hapgood, Mr. Eliot Caldwell, and Prof. W. O. Crosby, and a most enjoyable time was had in recounting the things that happened from forty to forty-four years ago and which have been happening since.

As a sort of aftermath of the claims of '76, '78 and '79 as the originators of the class colors, the secretary of '76 has recently sent out a circular letter to each member, asking for his personal recollections about this momentous occasion, in the history of the 'Stute. The secretary, Lewis, Hodgdon and Main all plainly recollect a meeting and that this occurred while the excursion to the Centennial Exposition at Philadelphia was being talked up. Each remembers the announcement of the decision and that hat bands of the accepted colors could be procured of Bent & Bush and that each purchased one of these hat bands. The secretary clearly remembers the interest with which this matter was discussed and the taking home of a small sample to discuss with his mother, who was much pleased with the colors selected and immediately set at work with her own hands making a sort of smoking jacket for her son, of cloth of the silver grey and corded with the cardinal red, which soon after came to him as a surprise.

F. K. Copeland remembers serving on the committee and states that his recollection has all along been that '76 did the selecting and deciding and that it would have been hardly consistent with our dignity as seniors as we then viewed it, to have left the selection to the freshmen of the class of '79, but from Fletcher, our class poet, erstwhile student in Germany and in recent years a resident of California, comes the most circumstantial account in the following letter. He states in a second letter that he thinks Aspinwall was on this committee and that he had treasured among his possessions a scrap book which contained the original sample of colors that he brought back from Bent & Bush; but unfortunately, this scrap book, together with most of his library, was in storage at his old home in Chelsea, and just about ready to be shipped to California when the Chelsea fire occurred and destroyed everything. He also

states that he thinks the committee proceeded to secure official confirmation from Dr. Kneeland, then secretary of the Institute and that possibly the secretary's records may show some entry. He says the committee deemed it important to have this color selection made official by some important official of the Institute rather than to have them left as merely the choice of a class or of a student committee.

His principal letter on the subject is as follows:

"Your circular letter of October 27, seeking the history of the colors of the Massachusetts Institute of Technology (cardinal red and grey) awaits my return here. I remember that history very well.

"The 'Centennial Year Class' of '76 appointed a committee to select 'Technology Colors,' which up to 1876 did not exist, so as to wear the chosen colors to the Centennial Exposition in Philadelphia, where we went in a body and camped on the grounds of the University of Pennsylvania in tents. Don't you remember it all? At the class meeting (in the large lecture room, next to S. Kneeland, secretary's, room) several of the boys then suggested to 'select more than one color,' 'make it colors,' etc.

"I recall clearly that it seemed to me strange that I was chosen on the committee, as the chairman was almost a stranger to me. Our class of 1876 was a rather large one for those days. Not only was the writer a member of that colors committee but he was the only one to obtain colors at the various Boston stores; all of the other members offered excuses, and had no samples when the meeting of committee arrived. We examined many and then discussed the colors. We all desired the cardinal red; it has stood for 1,000 years on land and sea in England's emblem; it makes one-half of the stripes of our American flag; it always has stirred the heart and mind of man, it stands for 'red blood' and all that 'red blood' stands for in life. But we were not unanimous for the grey; some wanted blue, I recall. But it (the grey) seemed to me to stand for those quiet virtues of modesty and persistency and gentleness, which appealed to my mind as powerful; and I have come to believe, from observation and experience, to really be the most lasting influences in life and history. And as grey was so long my ancestral color, of which somehow from youth I was especially fond, I quietly pressed its merits; and as it stood for iron and steel, and 'steel' (Bessemer steel) was only recently invented, the boys assented to it, and we recommended 'cardinal red and steel grey.' Don't you recall how the boys cheered when we had finished presenting the colors and their meaning? 'Red blood and simple faith' they always meant to me; I recall how I was always glad, whenever I saw them for years East, that we chose such a fine combination. Since residing here, one year I saw some neckties in Desmond's store, made half and half of the exact Tech colors (quite likely 'Made in Boston') and purchased and wore one at

times; then went after more, because so many seemed pleased by its combination, only to find them sold out, so that the combination evidently pleased many out here.

"Several times when receiving the *TECHNOLOGY REVIEW*, I thought it might be a nice thing to write a full little illustrated history of the 'Tech Colors,' but as I have felt so far away from Boston, and so much occupied, I never laid the suggestion before you or the editor. In fact, for years I rather lost some interest.

"The 'ancestral color' (grey) spoken of, is that of Douglas of Tantallon Castle, North Berwick, Scotland, the home of the Douglasses for 200 years. History of the Douglas is written, and England owes its stability to the day when Douglas saved the King; Douglas was not his old name, but garbed in an unknown grey the 'Dull grey color,' which is the meaning of the word 'Douglas,' has been interwoven with the cardinal red of long ago. Names were shifted easily in those times of continued warfare. As class poet I was quick to recognize the sentiment of things, and was surely filled with sentiment and music in those days, inherited from my beautiful mother, Elizabeth Douglas Hyde. The history of Douglas is very interesting, and Moran's painting of Tantallon Castle of 1910, a copy of which I have here, shows much to me of the character behind the dull grey garb, probably from Normandy.

"As all of my abundant library and every one of my historical relics were destroyed in the great Chelsea fire, I cannot supply you with the original selected red and grey silks, which may have been among my Technology, etc., bundle, showing the original colors shown to the class of 1876, and chosen by it as the 'Technology Colors.' Very likely you may be more fortunate in finding your class records of 1876, and the names of the committee. Seems to me Sam James was one; I recall the colors, but little more. The store where the colors came from was on the east side of Washington street, a little north of Summer street, but it may not now be there.

"Anyway, 'we' chose the colors, and wore them all to Philadelphia. That old class of '76 did things. I feel that the class of '79 will gladly recognize us in the history of things.

"The colors mean something; they were selected for their meaning as well as for their beauty; and I trust that throughout this twentieth century they will exert a good influence on the Institute. For surely a great day dawns, a new era, a new consecration. We are in transition days now."

1877.

RICHARD A. HALE, *Sec.*, Lawrence, Mass.

Herbert Jaques was born in Framingham, Massachusetts, on January 23, 1857 and died December 21, 1916. He was the son of Francis Jaques, a prominent banker of Boston, and Caroline



HERBERT JAQUES, '77

Louisa (Merriam) Jaques. He graduated from the Boston Latin School in 1873, and, after a year in Europe, returned and took a special course in architecture at the Massachusetts Institute of Technology, being identified with the class of 1877. During his course at the Institute his ability and practical ideas were made evident, and his universal good nature and geniality made him a favorite of professors and classmates.

On leaving the Institute he entered the office of Snell & Greger-son, architects, where he remained about two and a half years. In 1880 he became associated with H. H. Richardson, the well known architect of Trinity Church in Boston, with whom he remained until July, 1883, when he entered into partnership with Robert D. Andrews under the firm name of Andrews and Jaques. Mr. Andrews was a Tech '77 man, who entered Richardson's office in 1879. Mr. Augustus N. Rantoul of Harvard '87 was admitted to the firm in 1889, and the firm name was changed to Andrews, Jaques & Rantoul. Mr. Jaques continued with the firm until 1909 when he retired from active practice, and Mr. I. Howland Jones took over his interest, although the name remained the same, and Mr. Jaques continued to use the office as his headquarters.

In April, 1883, Mr. Jaques was married to Miss Harriet Sayles Francis of Brookline, who survives him, with three children, viz.: Mrs. Edward Motley (who was Miss Harriet Sayles Jaques), Herbert Jaques, Jr., and Miss Louise Jaques. He is also survived by two brothers: Dr. Henry P. Jaques of Lenox, Mass., and Eustace Jaques of London; and two sisters: Mrs. Arthur L. Ware of Framingham, Mass., and Miss Helen L. Jaques of Milton, Mass.

Mr. Jaques was a fellow of the American Institute of Architects, a member of the Boston Society of Architects, and the Boston Architectural Club. He was also a member of the United States Golf Association, the Massachusetts Golf Association, the Grand National Curling Club of America, the Boston Curling Club, the Bostonian Society, the Tavern Club, and the Country Club, of which latter he was chairman of the executive committee at the time of his death.

Funeral services were held at his late residence 9 Massachusetts avenue, Boston, and at the Chapel in Mount Auburn cemetery.

In response to the secretary's request, Mr. Andrews has written the following account of his association with Mr. Jaques:

"Jaques was a regular member of the Institute class of '77, and I was a special in architecture during the winter of '75-'76. It is my impression that it was during that winter that Jaques was obliged to make a sea voyage for his health, and I did not become acquainted with him until 1879, when I returned from Albany and entered Mr. Richardson's office in Brookline. During that winter we came together over educational and club work, and agreed to go abroad the following summer for purposes of study. When the

time came, however, it proved inconvenient for me to leave Mr. Richardson's office, and, as a consequence, it was arranged that Jaques should come out there as a draughtsman. Previous to that time he had been in the office of Snell & Gregerson, who were building the best residences of the Back Bay and many commercial structures. In their office Jaques got a good command of the practical features of planning and building, and when he came to Mr. Richardson's was able to make himself very useful. As the year went by and we were expecting to start upon our deferred trip abroad, Mr. Richardson decided that Jaques was too useful to him to let him go, and so I went without him. He had become Mr. Richardson's right hand, his constant companion in his comings and goings, and his 'daily reminder.' Hence it is no wonder that a year later, on my return from Europe, he took Jaques abroad with him on a trip that was famous at the time. Phillips Brooks, Richardson's close friend, was of the party, together with Dr. MacVickar and the Rev. Leighton Parks. The trip was a memorable one in many ways, and Jaques wrote an account of it that delighted Mrs. Van Rensselaer by its vivacious and easy English.

"Then came one more winter in Brookline; and in July, 1883, Jaques and I left Mr. Richardson's office and started in business, our office being located in Tremont Place, behind the Tremont House (as it then was). We had one house in Chestnut Hill to start upon and nothing else, but other work soon came in. Private houses, particularly in the country and along the North Shore, constituted the chief part of our work at first. In the late eighties came the so-called 'Boston Building' in Denver, Colorado, built entirely of brown sandstone, and forming at the time of its erection the most conspicuous office building in the city. This led to securing another office building in Denver for the Equitable Life Assurance Society of New York, which was a large and costly building for the time. It was entirely fireproof in construction, and certain preliminary tests were made, notably of the fire resisting properties of terra cotta floor arches, which were published and became known throughout the country. These tests were conducted under Mr. Jaques' personal supervision, and were regarded as important at that time. When work upon the Equitable building was started Mr. Jaques took his family to Denver, intending to remain until it was concluded, but the altitude of the region did not agree with him and a few months later he returned to the East.

"It is not of interest to recite the history of the firm, since it was not unlike that of many others in this locality. I may better speak of Jaques' peculiar facility in the handling of business, and the uniformly admirable impression that he made upon his clients. Well trained in the arts of business accounting and of the practical details of building, he added to these a cultivated taste and a keen perception of architectural fitness. I remember that at one time

we had two clients who met during the summer and discovered that they had the same architect. One said to the other: 'I suppose you have to return to town frequently to look after the progress of your work.' The other said: 'No, I am a poor man and cannot afford to do that. I cannot both pay my architects and do their work too.' Jaques loved the responsibility entailed by such marks of confidence and always made good. He liked doing this,—liked it as one likes a game. He carried things through with an easy confidence in results which was contagious, and made others work with him and do as he wished. Being fond of animals, he particularly enjoyed making provision for their comfort in stables and farm buildings. All outdoor life appealed to him, and in later years he gave much time to open air sports. At Mount Desert, Maine, he was a leader in opening up paths through the woods and over the mountains, and marking them with signs. These paths were then traced upon topographical maps for the benefit of visitors. In every social function he was invaluable because of the zest he lent to the occasion. He gave himself freely for others, and enjoyed doing it."

Mr. Jaques was one of the dominating factors in golf in this country, through which he became a national and international figure in the world of sport. He first became identified with the United States Golf Association in 1907 as a member of the executive committee, a position which he occupied again in 1908, followed by his election to the presidency of the same body in 1909, which office he occupied for two years. As head of the National Organization, he worked ever for the broadest and best interests of a game which has developed by leaps and bounds, and after severing official ties with the organization he abated none of his interest and was always consulted regarding important actions which arose. He became president of the Massachusetts Golf Association in 1911, succeeding Mr. G. Herbert Windeler, who has occupied the office from 1903 to 1910, and after four years of service as president of this association, the mantle fell upon Mr. Harry L. Ayer, for the following six years.

What Mr. Jaques has been to the Country Club the members know full well. He was chairman of the executive committee at the time of his death, and in connection with Chairman Windeler of the golf committee, he never ceased his efforts to develop for the club a golf course which has set a standard for scientific planning. The result has been a course which has won the praise of the greatest golf players in the world, who played there during the National Open Championship in 1913. Owing to the fruits of Mr. Jaques' efforts in giving the Country Club so scientific a course, he was sought by the committees of other clubs throughout the country, to whom he freely gave his time and advice.

He was also an enthusiastic curler and a prime mover in affairs of that sort. He was active in making it possible for the Boston

Curling Club to have indoor quarters in Boston, with artificial ice, and was president of the club, as well as being a member of the Grand National Curling Club. He was also instrumental in bringing about the annual curling matches between the Country Club and the Royal Montreal Curling Club of Canada, the two clubs visiting each other in alternate years.

Since the beginning of the war, Mr. Jaques practically sacrificed all other interests to those of helping the cause of suffering humanity, devoting practically all his time to the Belgian Relief and similar projects. He was chairman of the Serbian Relief Commission; and was also chairman of the executive committee of the National Allied Bazaar held in Boston in December, which proved so successful. He was the heart and soul of this movement, and, with his tremendous energy and great executive ability, he organized and carried out the details of the immense plan, which has been so successful in its results. However, the strain and exertion proved excessive, and he was stricken with heart failure and passed away the day following the close of the bazaar, knowing that it had exceeded anticipations and that he had given his life to the cause. One deep sorrow which added to his cares was the sudden death of his mother at Milton on December 7, two days before the opening of the bazaar.

All classes of workers for the relief of the Allies united in expressions of regard for his splendid devotion to that cause, and expressed their sense of the great loss that their various organizations had sustained. The memorial which is now being planned to commemorate his life and work of usefulness—that of endowing a ward in one of the hospitals of London or Paris for the treatment of eye injuries—should prove a fitting monument to him.

Of recent years he had renewed more intimately his acquaintance with the members of the class of '77, M. I. T. He had been president of the class organization for the past two years, occupying the office at his death. His activities and well planned arrangements for the class celebration at the time of the Tech Reunion last year were all in keeping with his thoroughness. His cordial welcome to the members who had not met him for years made them feel at home at the reunions and contributed materially to their success, and he will be greatly missed by the members of '77. He was greatly interested in the development of the group of New Technology buildings in Cambridge and his interest was manifested in a practical manner.

1879.

CHARLES S. GOODING, *Sec.*, 27 School Street, Boston, Mass.

In response to a letter from the secretary asking for material for TECHNOLOGY REVIEW devoted to the general subject "Technology's Duty to the National Government," sub-divided into

two topics, "Technology and Research" and "Trained Minds for the Future Problems of the Nation," the secretary has received the following letters:

The first from Richard W. Lodge, Redlands, Cal.:

Your favor of December 11 in regard to obtaining my views upon the subject of "Technology's Duty to the National Government" came to hand last week. I note that the above subject is divided into two topics, "Technology and Research" and "Trained Minds for the Future Problems of the Nation."

It is not quite clear to me what is embodied in the above titles, so please do not blame me if I am like the student who, not knowing anything about his examination, wrote a dissertation upon another subject.

Research work can certainly help any government, but whether this work can be carried out more successfully in government laboratories or independent institutions seems to be a disputed question. The European War is showing how necessary it is to have able men in all lines of manufacture and while I was in Great Britain, last winter, I was especially impressed with what that nation is doing.

That government is organizing in every direction so as to be dependent as little as possible, not only now, but in the future, upon other nations for materials of all kinds which she uses.

For instance, before the war enormous quantities of chemicals, dyes, etc., were imported from Germany, although many of these were discovered and first made in Great Britain. Every effort is now being made, and prices have been offered by the government and individuals for methods or processes, by which all these things can be manufactured at home.

Since the war started between 4,000 and 5,000 plants have been erected to make ammunition alone. Again, thousands upon thousands of mine props are and have been imported annually from Norway and Sweden, although England was once upon a time a thickly wooded country. It is now proposed, and a commission has been appointed, to reforest hundreds of acres in Great Britain, incidentally to employ many soldiers after the war, incapable of other work and thereby in the future supply Great Britain with wood of all kinds, the need of which she is feeling today.

Not only professional men, but men and women all over the British Empire are doing their utmost today in research work and otherwise to help the government both now and for the future.

It would seem as though Technology with its new plant and large laboratories was especially fitted to carry out research work, on certain lines, which should be of great benefit to both the government and to the country in general.

Under the second topic, I should like to substitute "Men of Common Sense and Initiative" in place of "Trained Minds," because the more I see of life and of the world the more it seems to me that it is these two qualities which count and, again, the European War is showing this. There has been instance after instance where specialists and trained minds, both in commercial life and in the military service have failed and where men of little training, but quick acting and with the above qualities, have come to the front and solved the problems. I believe that it is generally conceded that professors, teachers and technical men are, as a rule, poor business men and I should say that "Trained Minds" are by no means necessary to solve the Future Problems of the Nation, especially if said minds are lacking in the essential qualities referred to.

As you are a member of the Association of Class Secretaries may I suggest that the next time they wish a subject to take up our time, they select "The National Government's Duty to its Citizens" or something on that line.

The government today is making inquiries into the high prices of commodities and their bearing upon the high cost of living.

The average citizen has very little faith in such investigations when he sees the extravagant and senseless things that the government does (I am not referring to the present administration especially) and one wonders whether something is not much more necessary to solve the "Future Problems of the Nation" than what you have asked me to give my views in regard to.

Waite shows good class spirit by contributing the following, especially in view of the fact that he is very busy with legislative duties, having been elected to the General Assembly of Connecticut. He shows a good example to some of the other members of the class in helping out the secretary:

In our glorious and wonderful country there seems to be a growing tendency, which has made rapid strides in these past two years, to submerge everything else to the rush for wealth. All things else seem to have been lost sight of, for the time being. At times there have been seeming rifts in the clouds of selfishness, and momentarily there have been sporadic waves of sentiment which have halted the race for gold and have turned the thoughts of the country toward the future, and the dangers and problems it may have in store for our nation, and also have turned our thoughts for the moment on our relations and duties to other nations. These temporary waves of virtue have shown themselves in much talk, big processions, and but little manifest permanent results thus far, in the way of preparedness for this country, either in protection against, or readiness for, war, or preparation for the stupendous problems which face this country in the readjustments which must inevitably follow the present World War epidemic.

We seem to have become too far imbued with the idea that so long as we as a nation have money, and the resources within our borders for the most stupendous production of manufactured articles of all kinds, that we can hold our own, and that we need not look far ahead, but simply face the exigencies as they arise and not worry as to the future.

Such conditions of self-satisfaction, and false self-assurance are the natural results of the control of vital matters by untrained and unthinking minds. In this condition lies a great danger. When such a condition exists it becomes the duty of those who have had their minds trained to think and plan the execution of great manufacturing, engineering and constructive problems, to halt in their too exclusive pursuit of personal and corporate gain and development, and with true love of country and self-sacrificing patriotism, for a while turn their inventive and constructive genius to the preparation of this nation for passing through the dangerous waters which we must soon be prepared to navigate.

It is not the professional politician, nor the man whose thought is centered on selfish aims of personal ambition who can save the nation from possible disaster, but rather the man whose trained mind has enabled him to achieve success in the planning and execution of large problems in the commercial or the engineering world, who, recognizing that he has a solemn duty to the country that gave him the opportunities for his success, and in recognition of that duty, and in gratitude for what his country has made possible for him, decides to devote the experience developed by years of success in conducting important operations, to the organizing and development of the big preparatory work that will make it possible for the United States of America to stand as a complete example of *real* and *accomplished* preparedness against aggression either in war or in commercial competition.

Much may be said along these lines, but I feel that those of us who have had a Tech training, and have, as a result of our mental training, coupled with years of discerning effort, attained a position of comparative independence, should as a sacred duty freely offer, and give if needed, their time, thought and valuable experience to the working out of system, organization and efficiency in the administration of the various departments of the government of our nation, which should have the highest type of attainment in every branch of service, and in every phase of commercial development, and not remain longer, as now, the object of so much just criticism for failure to attend to the vital needs of preparation for the future.

Knapp writes as follows:

I have nothing new to suggest but will mention two very important works which might be taken up by Tech's "Trained Minds," which I have so far advocated with little or no success.

I urged Governor Guild when he was deep in trying to bring about "the conservation of our natural resources," to extend his efforts to include also the conservation of our human resources. The waste, enforced idleness, misdirected effort and low aims of the community keep many in misery and all far below what we should attain. If, as a people, our energy, intelligence and progressive spirit were properly guided, there is no reason why the whole community should not be raised to a much higher standard of comfort and well-being. This would take practical, constructive work of a high order free from sentimentality.

When the proposition of a national reserve body of engineers was under consideration, realizing that my supposed incapacity from age might exclude me from such service, as it did, I expressed a readiness to join in the work of the thorough organization of the civil population in preparation for war and especially invasion. Each individual should know just what his or her duties would be under a variety of circumstances, both to help the combatants and to see to the needs of the non-combatants. While thus preparing for war, such a movement would be of equal benefit in times of peace and would be working toward the human conservation before mentioned.

W. F. M. Goss writes from Urbana, Ill.:

A wonderful opportunity lies before the new Technology. It now has buildings and equipment. Its local setting is one of great strategic value. The new Technology has its chance to take a position of supreme leadership among institutions of its kind. Will it embrace the chance?

Leadership in scientific and technical fields of endeavor implies service. The new Technology to be the supreme leader in its field must become a magnificent producer of scientific facts and of theories based on facts. The problem of achieving and maintaining leadership demands for its solution the coöperative effort of many agencies, among the chief of which should be the alumni and other professional friends of the Institute. Everybody who is ready to push, will find a place to put his hand. What can the class of '79 do?

Spicer says:

Your circular letter of the 11th instant is before me and has been on my mind since its arrival. I shall look for the issue of the REVIEW with much interest although I shall not contribute towards the subject of "Technology's Duty to the National Government" further than to hope that, as Tech has a definite obligation to our government in the matter of military training which under "Trained Minds" backed by earnest coöperation from Faculty and fellows will solve not the least of our future national problems.

The term "Trained Minds" and their direct concern with any problems, national or otherwise, will be discussed I hope. Is it at all likely that minds trained to special pursuits, each the greatest mind in its class, working as a committee towards the most scientific, most logical and practical results can do this under the command and authority of a great or little political mind?

Only by beginning now, with the home, the kindergarten and the public school under *sane* minds adequately paid to train the child to know what the first letter of obedience is and through learning to obey natural and physical laws, open his mind to the training that *trains*, can we hope to approach the highest good to himself and his nation.

1884.

HARRY W. TYLER, Sec., Mass. Inst. of Tech., Cambridge, Mass.

From Bonillas we have a short note as follows:

I thank you and the members of the class for the kind invitation to meet you at luncheon before my return to Mexico, but regret that cannot be arranged now as I am ready to leave in a day or two.

With kindest regards to yourself and members of the class.

The *Trade Review* of January 11 has a short sketch of the activities of Franklin B. Richards:

Franklin B. Richards, Richard F. Grant and William Collins, who have become members of the firm of M. A. Hanna & Co., Cleveland, are men who have made a decided success in business and other lines of activity on account of rare natural ability and untiring energy.

Mr. Richards is a native of Massachusetts and a graduate of Massachusetts Institute of Technology. Starting soon after graduation as assistant chemist at the Joliet Steel Works, he worked his way upward and has had a large experience in the manufacture and sale of iron and steel and in the mining and selling of iron ore. His experience includes that of superintendent of Himrod furnaces in Youngstown in 1887, managing ore sales for Tod, Stambaugh & Co. in 1888, superintendent of the Brier Hill Iron & Coal Co. in 1889, general manager of the Buena Vista Iron Co., Buena Vista, Va., 1890 to 1893, and, since 1893, with M. A. Hanna & Co., first in the ore sales department, later general manager of blast furnaces and for several years manager of the ore and pig iron departments. Mr. Richards is a vigorous man, has traveled widely and is well informed on many subjects.

The death of W. Frank Carr, in Seattle, Wash., nearly a year ago was reported in the late spring to members of the class through the *Tech Quad*, but has not previously been mentioned in the REVIEW.

Carr came to us as a graduate of the Massachusetts Agricultural College. After completing the course in civil engineering he was assistant bridge engineer on the Boston and Lowell Railroad, and subsequently a member of the engineering faculty at the University of Minnesota. He was one of the early electrical railway engineers in Minneapolis, but on account of failing health removed to Roanoke, Va. In 1905 he became superintendent of electrical construction of the Chicago Street Railway Company, and in 1896 was made chief engineer and general road-master. In 1899 he became chief engineer with the Falk Company of Milwaukee,—occupying a leading position as steel founders. More recently he has devoted himself to railway construction.

A sketch of his life and work appeared in the April number of the *Proceedings* of the Society of Civil Engineers. Mr. Carr died suddenly of heart disease, February 25, 1916. Mrs. Carr and three sons survive him.

1885.

I. W. LITCHFIELD, Sec., Mass. Inst. of Tech., Cambridge, Mass.

William H. Eddy is president of the Technology Club of Fall River and during the past season the club has had a number of interesting meetings with increased attendance.—Charlie Eaton, who has pledged a flag pole to go in one of the minor courts of the Institute on behalf of '85, has been engaged in securing subscriptions from the class. Judging from appearances his job is no sinecure at this time. The flag pole is to set in a handsomely fabricated bronze pedestal which will be inscribed with the name of the class. The class of 1892 has pledged the flag pole for the

other court.—A son of Lee Homer will probably enter the Institute next year.—Tracy Lyon is now living in Brooklyn, N. Y. He has charge of the West Coast Department of the William H. Grace & Co., Wall Street, New York.

1889.

WALTER H. KILHAM, Sec., 9 Park Street, Boston, Mass.

George Lynde Richardson died at San Rafael, Cal., on December 20, 1916. He was married in the summer of 1889 to Miss Carlotta Smith of Boston and returned immediately to California. His first employment was in the southern part of the state but he soon returned to his birthplace near San Rafael, and for over twenty years was county surveyor and city engineer of San Rafael. He was taken ill on Sunday, December 10, with uræmic poisoning and died on the 20th. He was in his fifty-first year. He leaves besides his widow, two sons and three daughters, two of the latter married. His mother also survives him.

We reprint a clipping from the *Independent* of December 26 1916, published at San Rafael, Cal.:

In the passing away of George L. Richardson at the San Rafael Cottage Hospital last Wednesday evening, death has removed from society one of the most beloved men of this county. But few men run their course in life as smoothly as George Richardson. He possessed a sweet disposition and a personality that won for him the friendship of everyone who had the pleasure of his acquaintance. George never harbored anything in his heart for his fellowman but kindness, and all his expressions were guided with the same feeling. He lived as he died, honored, loved and respected.

In fact George Richardson possessed such an even temperament that he would rather go without a cent in his pocket than suffer the humiliation of asking his debtors for his just due.

For days before his demise his close friends said they watched the death mask gradually take possession of his face and they knew when he was forced to enter the hospital that the end was only a matter of hours.

For several years the deceased suffered from nervous attacks and at times these attacks were so severe that he was entirely incapacitated from doing manual work of any kind. In the past few months his condition grew worse and uræmic poison rather hastened the end. His strength was not commensurate with his zeal. A year ago he was suddenly stopped in his course and was again forced to cease from his labors. All hope had not disappeared, but his many friends knew too well the possibilities of the future. It came as might be expected, suddenly and without warning, and on Wednesday evening one of the truest, gentlest and most modest of men went back to his Maker.

Irreparable is the loss to this city and county which he loved so well and in the progress of which he rejoiced so often.

It was with the deepest feelings of sorrow and regret that his brother Elks and Eagles assembled at Masonic Hall last Friday afternoon to pay their last tribute of respect to the brother and man whom they loved and respected during his life time. The beautiful floral pieces at the funeral service conducted by the worthy order of Elks of San Rafael was another testimonial of the respect in which his friends held him.

The following beautiful tribute delivered by Past Exalted Ruler Thomas P. Boyd at his bier, speaks for itself:

To those of us who have lived in Marin county these many years nothing need be said of our departed Brother; to us his life has been an open book, and his high

merits are well known; but to those among us who have but recently arrived here, it is fitting that a few words be spoken of his life and virtues that they may know the reason for the high esteem in which he has been held. My heart is full of sorrow and I fear my emotions will prevent me from doing justice to the memory of my friend.

It was in Chicago a few months over 51 years ago that George L. Richardson was born. Though a native of Illinois, you might say in a large sense he was a Californian. At the tender age of seven years the boy came with his parents to Marin county. His venerated father, Troop H. Richardson, was given charge of the large holdings in Marin county of the Kents, and here, on our wholesome hills the lad grew from infancy to manhood and acquired the splendid physique and soldierly carriage that made him a distinguished figure on our streets.

While attending the local institutions for elementary instruction he evidenced such an aptitude for higher mathematics, that coupled with his love and yearning for outdoor life, his parents determined to prepare him for the learned and difficult profession of civil engineering and surveying. They sent him to the Massachusetts Institute of Technology at Boston, which has an exceptional reputation for the wide range of its instruction and its high standards of scholarship. The architects of the United States Navy are sent there for instruction in their most advanced courses.

By diligent application to his studies, united with a brilliant intellect, he met the severe requirements of this great college and was graduated with honor.

Immediately after receiving his diploma he returned to Marin county and began the practice of his profession. The careful, painstaking, excellent character of his efforts were soon recognized by the public, and at the early age of 28 he was elected to the responsible position of county surveyor, and about the same time was chosen city engineer by the city trustees of San Rafael, both of which positions he so ably filled that he continued to occupy them to the time of his death.

Associated as I was with George Richardson in professional and official capacities for a period of over twenty-one years, I am in a position to say that he was one of the masters of his profession and the services he has rendered in its practice have been of incalculable value to the landowners of this county. Early in his career in Marin he made a study of and mastered the intricate problems connected with the loosely drawn descriptions of the Mexican and Spanish land grants, and many a lawyer will testify how Richardson's industrious researches into ancient records followed by laborious hunts in the open country for obscure landmarks and time-hidden boundary monuments, were of vital aid in establishing titles to valuable land grants in Marin county.

His land surveys were unquestionably accurate, and for years have stood the acid tests of title examiners. His engineering work has proved of undoubted strength and lasting efficiency. He left nothing to chance or guesswork. When his task was turned in as completed it had stood all the checks and tests known to science and the employer accepted his work with no misgivings.

In his service to the public he was guided by the highest principle of rectitude and all of his official career was glorified by the golden splendor of fidelity. Incorruptible and upright through many trying years he labored for his beloved county with a singleness of heart and a purity of purpose to do honestly all those things he was chosen to do.

There was, however, no crabbed churlishness united with this strict regard for duty. He was as gentle as he was brave; no matter how pushed he was for time, how perplexing were his problems, he would lay aside his work, and in his patient, sweet way, seek to enlighten the anxious inquirer. Though rigid in rejecting unsatisfactory work by public contractors, he dealt the blow softly so as to avoid injuring as far as possible, the sensibilities of the offended.

His devotion to his family was intense, his affection unbounded.

And we who knew him as a friend and companion, loved him for his quiet, simple ways, his constant self-effacement, his eager desire to help when needed, subtle wit and droll humor. As in all things he was ever steadfast and loyal, never within his power did he ever fail to aid a friend in distress.

Franklin W. Hobbs, president of the Arlington Mills in Lawrence, spoke interestingly before a large audience at the Boston Art Club recently, advocating the establishment of the dye-stuff industry in this country as a means of national preparedness as well as industrial independence. He pointed out that a plant making dye-stuffs could be turned in time of war to the manufacture of explosives as the same apparatus and same materials were used in both cases. He said that at the present time, on account of the British blockade, most of the colors used in American manufactures were being made in this country and that they are as fast as German or other European dyes. Said he:

The war compelled American chemists to achieve in two years what might have been thought impossible to accomplish in a decade. They proved equal to the emergency and as a result our country stands today more thoroughly independent in the matter of all kinds of textiles than ever before in our national history.

The substance of these remarks formed only a portion of the address which had for its theme "The History of the Textile Industry in Massachusetts." Hobbs makes a good point in discussing the laws concerning hygiene in Massachusetts mills when he suggests

that for a time our philanthropists and politicians turn their attention to the conditions existing in the homes of the people and make some serious effort to improve them or to bring them, in some measure at least, up to the standard which has long been maintained inside our mills.

The first publication to be brought out by the second generation of '89 is a very interesting book about the White Mountain region called "Passaconaway in the White Mountains" by Charles Edward Beals, Jr., who is now twenty-one years old. There is an introduction by Beals, Sr. All who are fond of the scenery of the Sandwich Range and its surroundings will find in this book a great deal of interesting information together with many attractive photographs of that part of the country.

The secretary offers the suggestion that a five-foot shelf of the books by '89 authors be started and would be glad to learn of any which may escape his notice.

The coming dinner of the class will be held on the second Tuesday in March at the University Club, Boston.

1890.

GEORGE L. GILMORE, Sec., Lexington, Mass.

Ninety is once more called upon to do its duty, not only for dear old Technology but for our country and flag. Preparedness and organization are now the keystones for future prosperity and peace, not only for the United States but for the whole world. Few of us have realized the farsightedness required but it is commencing to dawn on us at last. Our government has been at work on the

question for the past year or two. Early last spring, the National Defense Board, of which Willis Whitney of the class is a member, commenced its real work. The country was divided into districts under men who had no axe to grind but worked only for the general welfare and future of us all. This board sent out to all manufacturing plants a list of questions to answer as to what they could do to support our flag if we were forced into a war. Questions were asked as to their line of work and as to how it could be best adapted to aid in case of trouble. Also, as to doing work for the government; not alone war supplies, but the hundreds of other articles that indirectly enter into our comfort and prosperity. Information was also asked as to changing the line of work in a plant for essentials more necessary.

Our manufacturers realized what was desired and promptly replied as a whole and showed a pull-together spirit for the general good that was most gratifying. Later, the National Academy of Science offered its services to the government and the National Research Council was organized by the President and here '90 came to the front again when George E. Hale of our class was appointed chairman. Since then Hale has devoted his entire time to the work and you fellows who know the "Corporal" know what that means.

The work of this committee is more one of research and investigation and organization, and that naturally leads to preparedness. Not necessarily for war, but more for protection in commercial competition we shall see following the close of the present European war. This is where Technology comes in, for as to research work M. I. T. stands at the head.

At the annual meeting in November of the Association of Class Secretaries it was voted to devote the coming issues of the *REVIEW* to this great question and in that every member of the class of '90 can help. A committee of the alumni will be appointed to take up the following suggestions:

1. By coöperating with the Institute in its commercial and scientific research, and probably by assisting in securing funds for that purpose.

2. By canvassing the alumni with the object of finding out who among them have been conducting researches and the character of the researches themselves.

3. By helping to establish a propaganda that will show the fundamental necessity of research and help to stimulate it generally as well as along special lines that may be particularly useful, these lines to be the subject of investigation and recommendation by the committee.

4. By making a canvass of the alumni to find out those whose experience would make them particularly useful for the varied needs of the country in case of war.

5. By assisting so far as possible in making military instruction

at Technology more attractive, and by giving all the assistance it can to the newly formed engineer corps.

6. By asking for suggestions generally it can undoubtedly secure points of great value to the country covering the entire preparedness program.

7. By going into this matter thoroughly, as an alumni organization we can blaze the way, so that the government representatives will be equipped to canvass other similar institutions to the best advantage.

Now '90, we want to know what you are doing, what you have done and what you can do in any way, in time of stress, that might be an aid to our country. Do not delay but drop a few lines to your secretary. He likes to hear from you direct and only wishes that the Reunion last June could have lasted longer so that we could have seen more of each other.

Tell us your experiences and they will interest others in the class. What has your lifework been and how might your abilities best serve the future and the glory of Technology, our country and the world.

If in a manufacturing line, tell us of your work, your experience in handling men and what new ideas have occurred to you.

If an engineer, what work you have done and what you could do if called upon.

If in business, your ideas on finance, exports and general distribution and where different articles are made and where most needed.

If you have traveled, tell us when and what (and where) you saw that could be of help for the future.

Now fellows, get busy for once and do a little serious thinking and then pen us your thoughts. Later there will probably be a list of questions sent to us all and when received do not leave it for the waste basket, but fill it out and return it at once. Everything will be indexed and reindexed, so that the best information on any subject can be found at once. Remember that, as members of the class of '90 and of the alumni of Technology, while perhaps not quite so young and active as the later classes, for we are rapidly crossing the age of twoscore and ten, our spirit is still young and active and while in case of war we may not be called upon to face the shot and shell at the front, as several of our number did in the Spanish War, and one gave his life, we shall be found where our duty best calls us, as the men behind the men behind the guns, and do our share and a little more, cost what it will. Now '90, show your patriotism and let us hear from you.

We recently learned that Ed Stearns was in Boston early in December on a visit to his boy at Andover. The next time that Ed comes to town we trust that he will let us know of it so that we can get a few of the boys together.—In an article in the *Saturday*

Evening Post of December 9, under an article, "Crowding Twenty-four Hours," the following paragraph appeared:

A more intimate, personal portrait was that of Charles Hayden, as painted by another newsgatherer:

"Charles Hayden, I think, is the very busiest individual in the street. He's a little fellow and one of the real dynamos among the big men. It's rush! bang! bang! all day long. And he's cordial and considerate all the time. One day he was tied up with Judge Babbitt over the Rock Island plan. I was waiting in the ante-room to see him. His secretary told me I could see him on the fly as he bolted from his room to the elevator. He came out and I collared him. Nathan Amster, chairman of the Rock Island protective stockholders' committee, was outside waiting for a word. Hayden told me to wait for him at the elevator and I could talk to him on the way down from the ninth floor to the time he got into his car, waiting downstairs. So, after he had finished with Amster, I got my talk as promised."

At the banquet of the American Society of Mechanical Engineers at United Shoe Machinery Athletic Club in Lynn in November, C. W. Rice gave an address on "Industrial Preparedness."—In the *October Review of Reviews* was an article on the "Eight-Hour Law for Railroad Men," by W. Z. Ripley.—Mrs. J. L. Batchelder was one of the patronesses of the Harvard-Princeton Musical Club joint concert at Jordan Hall November 10, the night before the big game.—M. O. Southworth is now at 4555 Malden street, Chicago, Ill.—R. T. Walker is now at 29 East 38th street, New York, N. Y.—E. A. Holmes is at 1746 Wilcox avenue, Hollywood, Cal.

"The carelessness and inefficiency of the Public Works Department is alleged by the Finance Commission to be responsible for the delay in nearly \$800,000 worth of street paving," in a report made on this subject to the City Council on November 20.

The report was prepared by Guy C. Emerson, consulting engineer of the Finance Commission, and is the severest castigation of a city department which the commission has issued for many months. All the blame for the delay is put squarely up to the city officials, and the paving contractors are held blameless for present conditions.

"Some of the striking features for criticism," says the report, "are as follows":

1. The apparent delay in awarding contracts until the better working part of the season has passed.
2. The apparent disregard of the contract date for completion by the contractors and the lack of effectual means for forcing the contractors to accelerate their work and to finish it on or before the contract date.
3. The failure of the public works officials, in fixing the time for the completion of the contracts, to discriminate between work of general public necessity, for which a short time limit should be fixed and special means taken to secure the completion of the work, and work of only local importance, for which practically unlimited time could be given by the contractor, if by such an extension of time lower prices and better work could be secured.
4. The lack of discrimination in making up contracts, between streets that can be closed so as to give the contractor exclusive occupancy during his work without great public inconvenience and streets that cannot be closed without great public inconvenience and for which special methods of construction should be adopted.
5. The failure to secure to the contractor the right of way in his work by having

the work of public service corporations, as well as the work of sewers and water pipes, finished before the contracts are let.

6. The lack of sufficient preliminary investigation of conditions before plans and contracts are prepared.

Darragh de Lancey was general chairman of the ten team committee of Waterbury that raised in a week over \$350,000 for the Y. M. C. A.

At the meeting to celebrate de Lancey wound up by saying:

You have waged a great campaign, and done a great work. I give you this parting thought to comfort you. Years from now your grandchildren will lord it over all other kids with the silencing remark: "Huh, my granddaddy was in that great campaign of 1916 for a new Waterbury Y. M. C. A." Then the crowd broke up to saunter around and gradually drift home to the accompaniment of smiles.

Gary Calkins is the proud father of a small boy that arrived on June 21, Samuel Williston Calkins, weighing seven and one-half pounds. This is why Gary was not with us at our reunion. The youngster evidently intends to outstrip his father in weight as from a chart that Gary is keeping he certainly shows a good constitution as up to the first of December his weight had increased to twenty-one pounds. At the Labor Day Golf Tournament at Woods Hole, Gary succeeded in carrying home a silver loving cup. We will not go into details as to how he won it, but some of the rest of the boys of the class are laying for him and, if they meet on the course this coming season, it is expected that the ownership of said cup may change.

In December your secretary had the pleasure of dining with Calkins at the Century Club in New York. The evening was wound up at the billiard table and the less said about the result for your secretary the better. However, he will have his revenge when he gets Calkins on the golf course.—N. G. Nims is now connected with the office of York & Sawyer, architects, 50 East 41st Street, New York City.

The report of the Republican National Publicity Committee, New York, gives the names of contributors of funds to the recent presidential election and the largest contributor was Pierre du Pont. He gave \$70,000.

Among the other contributors giving more than \$5,000 was Charles Hayden of our class.

At the alumni dinner in Boston, Saturday, January 6, '90 was represented by the following twelve persons: Burley, De Wolf, Gilmore, Goodwin, Mossman, Packard, Reed, Rogers, Royce, Sherman, Wason and Whitney.

The paper on "Research and Organization" read by Whitney was one of the gems of the evening. We certainly have reason to be proud of our classmate who is in charge of the Research Laboratory of the General Electric Company at Schenectady.

As there was a vacant seat at our table T. M. Proctor, '86, joined us and was welcomed to the fold.

It has been suggested that the members of the class residing in or near Boston should occasionally get together and have an informal luncheon.

As your secretary is headed for the Southern Golf Courses early in February to be away until April, no attempt will be made to set a date as yet, but we hope that we can arrange so that some time in the month of May we can meet informally some noon at one of the clubs in Boston and have luncheon and notice of it will be sent out later.

We print the following from the *New York Telegram* of November 26:

Municipal managership for the city of New York was suggested by Richard S. Childs, secretary of the National Short Ballot Organization, at a meeting at which he presided in the City Club, No. 56 West Forty-fourth street.

The suggestion was made following an address by Henry M. Waite, city manager of Dayton, Ohio, who contrasted good government with bad government, telling nearly two thousand members of the club just what he did to develop a high standard of government in Dayton.

Mr. Waite was cited by Mr. Childs as the right man to take over the management of New York, adding that when public sentiment here had ripened to the degree of following Dayton's example, the city manager of Dayton would be the logical man at the head of the government of this city.

Mr. Waite is an engineer, formerly in railroad work. He was head of the Department of Public Works in Cincinnati during the reform administration of Mayor Hunt. He took the place in Dayton for \$12,500 a year after \$15,000 had been offered to him by a private corporation.

He said:

When I went to Dayton, in January, 1914, I found no serious corruption, but general looseness and inefficiency. Local politicians were in jobs where experts were needed. Each department was running itself and there was no orderly budget procedure or financial control.

There was a staggering bonded debt of more than \$6,000,000, because the old administration borrowed, where possible, to avoid taxation. Pavement repairs, for instance, were paid for by bonds. A bond issue of \$800,000 for flood repairs in 1913 had been partly used for running expenses so as to produce an ostensibly good showing for the year. There was a floating debt of unpaid bills and expenditures in excess of income—a familiar feature of Dayton's finances of \$125,000.

There was a "red light" district. The water supply was insufficient, the mains having been built for a population of thirty thousand. There was no ash or rubbish collection, and only a partial garbage collection.

The class will also read the following article from the *Post Express* of December 2, with interest:

If a man who has benefited not only the people of the community in which he lives, but all the people of the country to which he owes allegiance and all of the people of the civilized world is great, then Willis Rodney Whitney, Ph. D., who is to lecture in this city Tuesday night may be so termed. The lecture will be before a joint meeting of the Rochester Optical Society, the Rochester Chemical Society and the Rochester Engineering Society and will be in Catharine Strong Hall at the university. Dr. Whitney is a member of the Naval Consulting Board, and director of the research laboratory of the General Electric Company, with headquarters in Schenectady. His theme will be "Scientific Research and National Needs."

Born in Jamestown on August 22, 1868, he was graduated a bachelor of science from the Massachusetts Institute of Technology in 1890, and six years later secured

his doctorate from the University of Leipzig. His alma mater needed him, and he joined the faculty as instructor and became associate professor of theoretical chemistry in the Institute. But large problems pressed for solution in the industrial world, and the General Electric Company was especially anxious to ascertain definitely whether it was possible to reduce the ratio between the number of units of electricity required to produce a unit of light. The ratio was 4 to 1, and the Edison-Swan carbon filament was the only incandescent lamp known. That was fourteen or fifteen years ago, and Dr. Whitney was invited by the General Electric Company to make an effort at the Schenectady plant to improve the situation.

Possibly nobody knows what was in the mind of the officers of the company when the invitation was extended, or on just how wide a basis the expectations and plans of Dr. Whitney were based when he accepted, but it is known that the research laboratory provided under his direction was comparatively small, although exceedingly well equipped. Somewhat similar laboratories had been organized by the large steel companies, but no such corporation as the General Electric Company had previously organized a laboratory for research in physical chemistry.

Because the melting point of tungsten is higher than that of any other element, it was the one chosen by Dr. Whitney for his investigations. In fifteen years Dr. Whitney has raised the name of the element from a word seldom used even in chemical laboratories to one that is heard in every building in the civilized world in which electricity is used for incandescent lighting. The first positive result obtained by Dr. Whitney was to learn that by heating the Edison-Swan carbon filament in vapors of hydrocarbons the surface was reduced to graphite and that with this filament the ratio of electricity to light was reduced from 4 to 1 to 3 to 1, or 25 per cent. This was known as the metalized carbon filament lamp.

In both Schenectady and Germany investigators had been trying to make tungsten filaments, but the problem was complicated by the fact that under ordinary conditions tungsten could not be drawn into wire, that it was not ductile. Dr. Whitney found that with pastes made of certain tungsten salts that were forced through a hole a filament could be made with which it was possible to further reduce the ratio from 3 to 1 to 1.25 to 1, but the filament was very fragile. Dr. Whitney believed that it was possible to draw tungsten into wire, and this belief was strengthened by the fact that when metallic tungsten was obtained by heating the oxide with carbon in the electric furnace the metallic tungsten so obtained could be welded like iron. This was six or seven years ago, and from the small beginning Dr. Whitney had assembled a considerable staff of researchers and had organized the laboratory on a broad basis. Dr. Whitney next learned how to weld tungsten into bars and how to draw it into wire, but not sufficiently small to use as a filament.

The next step was to use diamond dies, with the result that wire small enough for use in lamps was made, and what is known as the Mazda lamp was announced, with the ratio reduced to about 1 to 1. About three years ago Dr. Whitney started another investigation destined to revolutionize conditions in the use of electricity, increase its efficiency and reduce its cost. The purpose was to ascertain the ratio between the heat a filament lost and the amount of gas left in the lamp during a given period. The bulbs are always made as highly vacuated as possible, but under present conditions a perfect vacuum is only theoretically possible. His investigations led to the discovery that if the bulbs were filled with nitrogen the blackening of the bulbs, due to the deposition of minute particles of the vaporized tungsten on the glass, was prevented. It followed that if the bulbs were filled with nitrogen the tungsten could be worked with a still higher temperature, and with greater efficiency, and the Mazda C lamp was announced, with the ratio between electricity and light reduced from 4 to 1, where it stood when Dr. Whitney went to Schenectady to about 0.6666 to 1. In other words, as one of Dr. Whitney's close friends put it, the same quantity of electricity will go six times as far today as it did the day Dr. Whitney began his work in Schenectady.

Dr. Whitney has done much other work. His improvement of the Coolidge X-ray tube is the greatest advance in X-ray technique, it is said, that has been made in many years, and he has devised a very small bulb that acts as a very powerful generator in wireless work, and also devised the enameled wire used in winding electric instruments.

Dr. Whitney was chosen, with Dr. Leo H. Baekeland, to represent the American Chemical Society upon the Naval Consulting Board. Both men have been very active in the propaganda for industrial preparedness. Dr. Whitney believes that America needs organization and coöperation among scientists and technologists, which, by making industries more efficient and by teaching new, cheaper and shorter methods of obtaining what is wanted will make everybody better off. He says that wealth comes only from production, and that the only thing that can increase the ability to produce is scientific knowledge, so that for more efficient production America must look to scientific research. Hence his subject for Tuesday night, "Scientific Research and National Needs."

EDMUND D. GARFIELD

We regret to report the death of our classmate, Edmund D. Garfield, on November 19, who was with us at Tech for the first year or two.

Many men prominent in the official and commercial life of Fitchburg, Mass., attended the funeral on Wednesday the 22d, of Edmund Dana Garfield who died in Washington on Sunday the 19th of November.

He is survived by his wife, Elsie Van Sant, and young son, Edmund Dana, Jr., and three sisters, Mary L. Garfield, Theresa N. Garfield and Mrs. W. A. Blodgett of Lincoln, Mass.

He was born October 12, 1866, in Fitchburg and was the son of the late Mr. and Mrs. James Freeman Dana Garfield. He had made his residence in this city practically all his life, attending the public schools here, the Brown & Nichols School in Cambridge, and the Massachusetts Institute of Technology, '90. He was a charter member of the Fitchburg Athletic Club.

Mr. Garfield had been manager of the Brown Bag Filling Machine Company plant in Washington for the past four years. B. F. Brown, president of the company, members of the office and shop force met the funeral party at the station in Fitchburg and escorted them to the grave. As the little procession wound its way over the hill and down the slope, patches of snow on the still green grass, a mass of flowers silently but beautifully expressing the sympathy of many hearts, a long line of men, groups of old school-mates, friends and relatives—all these made a picture never to be forgotten.

The service was conducted by the Rev. B. R. Bulkeley of the Leominster Unitarian Parish and was simple as he in whose honor it was held would have wished.

A few verses of Scripture, a prayer and a beautiful benediction were the only spoken words, but all who heard them unconsciously realized that the influence of sincere life is eternal.

1891.

H. C. FORBES, *Sec.*, 88 Broad Street, Boston, Mass.

FRED A. WILSON, *Asst. Sec.*, Nahant, Mass.

Fred C. Blanchard, "Ole Maje" Blanchard has skipped from Bridgeport to Detroit. What? No—we believe his leaving was

perfectly proper. He is now vice-president in charge of engineering and manufacturing, of the Detroit Lubricator Company, with an address Trumbull avenue, and G. T. R. R. It seems strange to your secretary that both Bridgeport and Fordtown should somehow carry an implication of putting things across.—W. C. Dart—our valiant adjutant, has recently been chosen a director in the Rhode Island Hospital Trust Company of Providence. How many '91 men are bank directors? Stand up and be counted. At a meeting and dinner on January 10 of the Massachusetts Bankers Association at the "Costly Pleasure" there were three '91 men—all directors in banks—W. I. Palmer, L. C. Wason, and F. A. Wilson—we will not use nicknames in such a connection.—It was a pleasure to receive sometime since, a letter from R. S. Ball from 3 Devana Terrace, Cambridge, Eng.—Bobbie Ball—whom none of us have seen (on this side of the Pond at least) since 1893. Here it is—now write to the secretary and say he pleased you by inserting it.

Your very cordial and welcome letter deserves a complete and hearty answer, and if I cannot fulfil the first condition you may take the second as assured, and pass it on to the boys raised to the 27th power. Yes, I miss keenly my friends of college days, and deplore the long distance that separates me, made longer and more hazardous by this awful war. But everything has an end, and when we are again at peace I hope opportunity will offer for a handshake all round. At present, however, my duties prevent a visit, but I shall be with you in the spirit if not in the flesh next June. Most of us here have had to change our educational work for other duties incident to the war. All our students have gone and the instructing staff in engineering are putting their knowledge to good account in various ways to assist the government, including myself. More than this I cannot tell you at present. The particulars asked for by Garrison would have been supplied had not the papers been unfortunately mislaid, but I hope the following will suffice:

I have been married thirteen years and have two children, a girl eight and one-half and a boy of seven, named respectively, Stella Elizabeth and Robert Sturge. We live here, and I am engaged in lecturing and instructing at our well equipped engineering department in the University. I have published a book "Natural Sources of Power" some eight years ago which has done well, and have also written numerous articles and papers on engineering matters.

The secretary again wrote Ball but has no reply—presume the censors may have seen its value and saved it for themselves.

A letter from a Clement March living at the address given in our '91 Roster Booklet says he is continually receiving mail matter forwarded from the address we find given in the files of the alumni association, but that he is not our man. Where is our man? Clement March, Tech '91, speak up for yourself—we want you. This other Clement March also wants to know who you are and what relation you are to him.

There is in existence a committee for Mobilizing Technology's Resources in case needed for national defense. Other parts of the REVIEW will have something to say about it. There is a committee of twenty-five with an executive committee of five. The list contains du Ponts, Maxims, two generals, etc. Careful scrutiny

fails to reveal more than one '91 man. Why so? Morris Knowles won the toss among our class—but we should have thought they would have needed at least a half dozen of us.

Charlie Garrison is still yelping at our heels. When you do answer, and may it be soon, remember his address is 114 Bedford street, Boston. And send *those* information, and *them* photographs, at once. Don't be a laggard, a sluggard, a dullard, or any other "ard"—we are already saying hard things about you. By the way, guess we will look it up and see if we have replied ourselves.

1893.

FREDERIC H. FAY, *Sec.*, 308 Boylston Street, Boston, Mass.
 GEORGE B. GLIDDEN, *Asst. Sec.*, 551 Tremont Street, Boston, Mass.

The name of Frederick Tallmadge Towne, a former member of the class of 1893, who died eleven years ago, has been linked with a contribution to the endowment fund of the Institute under the offer of "Mr. Smith." In sending his check for \$10,000 to the Institute, Mr. Henry R. Towne of New York, Fred Towne's father, wrote as follows:

In doing this I attach no further condition, but it will gratify me greatly if the income from my contribution can in some way be associated with the name of Frederick Tallmadge Towne; for example, as suggested by Doctor Maclaurin when he did me the honor of calling on me, by applying it to a "lectureship" on industrial management, in which Fred was deeply interested and to the advancement of which he contributed notably by example and precept. I may add that there will be a peculiar fitness in doing this for the reason that, at my instance, the late General Walker, as President of the M. I. T., authorized Professor Schwamb, in 1891, to organize a course of lectures on that subject (the earliest of which I have knowledge), with the result that thereby the M. I. T. set an example which has since been followed by nearly all of the leading universities and technical schools in this country.

A classmate of Fred Towne's has added \$5,000 to the fund, making it \$15,000 in all. This fund is notable both in the appropriateness of the expressed wish of the donors and in the fact that it is contributed in such a way that the Corporation may make another use of it, if the time should come that a lectureship on industrial management would not bring the greatest benefit to Technology or be the most fitting use of this memorial to Frederick Tallmadge Towne.

Another classmate, one of Fred Towne's close friends, writes as follows:

Fred Towne is remembered by us as being a fellow of an exceedingly lovable and happy disposition and one with whom we all liked to be thrown in daily contact. He was a very manly, clean cut and square associate. Everything about him was open and above board. He seldom, if ever, lost his temper—though his anger was thoroughly aroused when he came in contact with a man who was the least bit underhand. He could not tolerate anything small and yet he was always ready to help one to a broader and better truth.

The writer of these few and very inadequate lines was an intimate friend and during Fred Towne's life and since his death has always felt him to be the best and

most desirable type of American young man. It is said that the ideal is never attained, but if it were—then Fred Towne was the one who attained it.

Of the many and very striking characteristics of Fred Towne were his ideas and ideals of large affairs, his genius for organization and his accomplishment of big and worth-while things. His mind followed as well as hewed the way through broad channels and the larger the problem the greater the zest with which he attacked it. It would seem, therefore, that the linking of his name with so great a project as the New Technology is especially fitting—for we are sure that, were he living, he would have accepted the ample opportunity there has been and still is to assist in the development of so worthy a cause. There is no question that the scope of the idea, the organization and detail required and the ends to be attained would have made a strong appeal to him and would have received from him a very material, moral and active support.

John I. Solomon was the guest of his classmates at one of the most interesting and unusual dinners ever held by the class, this being at the Engineers Club, Boston, on Wednesday evening, the 20th of December.

The past ten years of Solomon's life have been spent in Ceylon and India, principally the latter, where he has been engaged in the pearl industry. Solomon has accomplished two things which have never been done by anyone else in the world. The first is the successful application of the X-ray to detect the presence of pearls in oysters, by which process oysters can be examined without injury and only those bearing pearls destroyed, the 90 per cent or more of non-pearl-bearing oysters being returned to the sea for further growth. The radiographing of the pearl oyster was a great step toward the conservation of these oysters which were rapidly becoming exterminated by the methods formerly in use. The success of the radiographing process was demonstrated by Solomon during his two years' sojourn in Ceylon.

While in Ceylon, Solomon learned from native sources of greater possibilities for the pearl industry in the Mergui Archipelago in Burma, a region comparatively unknown to white men. After personal investigation, Solomon secured from the Indian Government a long-term lease of one of the islands of this archipelago, where he established his pearl industry.

Although the radiographing process for detecting pearls had proved successful, Solomon believed that there were far greater possibilities ahead by actually cultivating pearls in oysters. After several years of intensive study of the pearl oyster, Solomon has succeeded in the remarkable feat of growing pearls at will, something which no one else in the world is doing today.

The European War has pretty much upset the pearl market of the world just now, and because of the war, Solomon spent a number of months during 1916 in France and England, in connection with the problem of marketing his product. In November, he returned to the United States for a vacation, but he expects to return to Europe this spring, and then go on to his plant in India. He intends to make a strenuous effort to be in America in June,

1918, in order to participate in the twenty-fifth anniversary of the class.

Solomon will be glad to hear from all his classmates at the following address—John I. Solomon, Burma Shell Company, Limited, P. O. Box 103, Rangoon, Burma.

Charles M. Spofford, the new class president, presided at the dinner, and in addition to Solomon, those present included A. F. Bemis, S. A. Breed, H. N. Dawes, E. D. Densmore, F. N. Dillon, F. H. Fay, G. B. Glidden, C. F. Hopewell, A. L. Kendall, Edward Page, E. S. Page, W. B. Page, J. H. Reed, W. A. Soley, L. B. Stowe, S. P. Waldron, S. E. Whitaker, E. L. Wingate.

John I. Solomon gave an address on his work in the pearl industry at the Institute on December 19 before the regular semi-weekly meeting of the officers and fourth-year and graduate students of the department of biology and public health. A general invitation to hear Solomon's address was extended to the officers and student body of the Institute, and many were present from other Technology departments. At the close, tea was served in the department of biology by Mrs. William T. Sedgwick.

Jesse B. Baxter was appointed by Governor McCall of Massachusetts one of the three members of the Commission on Waterways and Public Lands, a new board appointed to take over the duties of two former state boards, the directors of the Port of Boston and the State Harbor and Land Commission. The following account of Baxter's career appeared in the Boston *Transcript* at the time he was appointed.

Jesse B. Baxter was born in Quincy, in 1872. He moved over the line to Milton when he was only six months old, and has lived in Milton ever since. He was educated in the grammar and high schools of that town, and was a member of the class of 1893, M. I. T. Subsequently he went to Kansas and taught school for a year there. Having taken the chemistry course at Tech, after his teaching experience in Kansas, he worked as a chemist in the same state in connection with the production of silver. Returning to Massachusetts, he was connected with a large dye stuff concern. Later still he entered the Globe National Bank of Boston. After that institution failed, he went to the Hamilton National Bank of Boston and, after that institution consolidated with another institution, he became connected with the Freemans National Bank of Boston. He was discount clerk in the Hamilton and the Freemans Banks. At present he is vice-president of the Blue Hill National Bank of Milton.

Mr. Baxter has served in the State militia for three years as a member of Battery A, Field Artillery. He enlisted in the Spanish-American War in 1898. He has served as a member of several local boards in Milton. He was on the board of selectmen for six years and chairman of it for three years; and on the water commission for three years. He was chairman of the Milton Republican town committee for twenty years, has been a member of the Republican State committee for three years and treasurer of the last-named organization for the last two years, holding that office at present.

Mr. Baxter is a member of the Society of Colonial Wars, the Bank Officers' Association of Boston; and the Massachusetts, Norfolk, and Middlesex Clubs, and of the Republican Club of Massachusetts.

Walter I. Swanton, assistant engineer, U. S. Reclamation Service, is the author of two interesting articles which appeared in

the *Reclamation Record* for August and September, 1916. The first, "A Government Bureau of Information on Wheels," describes the safety-first train, consisting of twelve steel cars, ten of which were loaded with Government exhibits. At the close of the interesting Safety First Exhibit in the National Museum at Washington, D. C., in the fall of 1915, the wish was expressed to show the people of the country, who were unable to attend the exposition, just what Uncle Sam is doing along these lines, and the safety-first train was due to the coöperation of Secretary Lane of the Department of the Interior and President Willard of the Baltimore and Ohio Railroad. The article describes the exhibits at length, and speaks of the valuable results of the first tour of the train, some 4,000 miles in extent, during which the train visited forty-three cities, was open to inspection on fifty-three days, and the exhibits were viewed by about 325,000 persons. Swanton's second article, "A Day with the Safety-First Train," appearing in the September issue of the *Record*, gives a graphic description of operating this unique, successful "World's Fair on wheels." The train will make a total journey of some 8,000 miles, and will doubtless be visited by nearly a million people.

It is our sad duty to announce the recent deaths of three members of the class—Walter Levi Frisbie, who died on August 30, 1916, Lyman Appleton Bowker, on September 8, 1916, and George Edward McQuesten, on November 7, 1916.

Walter L. Frisbie was graduated with the class in the mechanical engineering course, after which he was graduated from the Yale Law School, and was admitted to the bar. He then began the practice of law at Waterbury, Conn. In 1894, his grandparents, who had been his foster-parents, both died, leaving him almost entirely alone in the world. Shortly after, a shadow began to fall upon his previously bright intellect, and this gradually deepened until it was evident that the hopes he had cherished for worthy life activities were permanently blighted. For many years, Frisbie was an inmate of a Hartford sanatorium, where he died. During the last year of his life, he was subject to frequent attacks of epilepsy which became more severe with each occurring attack, until the last, which carried him away.

Lyman A. Bowker died as the result of injuries received in jumping from a moving trolley car at his home city, Waltham, Mass. He received a compound fracture of the skull, and was unconscious from the time of the accident until the time of his death, which occurred a few hours later. Bowker was a member of the firm of Bowker & Roskilly, interior decorators, with offices at 120 Tremont street, Boston. He was widely known in Waltham, where he served for three years as a member of the board of aldermen. He was a prominent Republican, and had served as chairman of the Waltham Republican City Committee. He was a member of Monitor Lodge, A. F. and A. M., and of the First

Corps of Cadets. In 1898 he married Miss Alice Maynard Wade, and he is survived by his widow and three children, Eleanor Wade, Edith and Lyman A. Bowker, Jr.

George E. McQuesten, treasurer of the George McQuesten Company (lumber dealers) of Boston, and a resident of Brookline, died on Tuesday, November 7, 1916, at the Allston Hospital, New York, from pneumonia. He was visiting that city on business, and was taken ill on the Sunday previous. The following is taken from an account of McQuesten's death, which appeared in the *Boston Transcript*.

"Mr. McQuesten was born in Nashua, N. H., May 1, 1868, and after graduating from the Massachusetts Institute of Technology he entered the business which his father founded. He was one of the pioneers in automobiling in Massachusetts and was one of the charter members of the Massachusetts Automobile Club. His great interest in electrical inventions led him to erect a windmill on his father's estate at Marblehead Neck, which was one of the first aërogenerating plants for supplying electricity built for private use in the country. The plant later received the favorable attention of the Government.

"Mr. McQuesten was a member of the Country Club, Brookline, Eastern Yacht clubs in Boston and New York. He was a Mason and Mystic Shriner. He is survived by a widow and a daughter, Barbara McQuesten, and two brothers, Frank B. McQuesten and Fred McQuesten."

Address Changes.

The following have been received: Charles V. Allen, care Westinghouse Electric & Mfg. Co., Van Nuys Bldg., (Res.: 688 Witmer St.) Los Angeles, Cal.—Frank S. Badger, 9 Cloak Lane, London, England.—James A. Emery, 115 Broadway, Room 2010, New York City.—Arthur E. Fowle, care Libbey-Owens Sheet Glass Co., Toledo, Ohio.—Clarence D. Gilchrist, 28 West 23d St., New York City.—George T. Hanchett, consulting engineer, 237 Fulton St. (Res.: 141 East 44th St.) New York City.—Charles R. Walker, Box 912, Kingston, N. Y.—S. Edgar Whitaker, 63 Pleasant St., Newton Centre, Mass.

1895.

WINTHROP D. PARKER, *Sec.*, 12 Bosworth Street, Boston, Mass.

In reply to several requests sent out by the secretary for articles for the current number of the *REVIEW*, the following men responded:—E. H. Clapp, E. H. Huxley, and C. H. Parker.

The article by C. H. Parker was written for the June, 1916, number of *Edison Life* published by the Edison Electric Illuminating Company, and is as follows:—

The question of "National Preparedness" is, at the present time, being widely discussed but in many instances with a profound ignorance of what the term should mean.

Most people in this country today, and until very recently in Great Britain also, looked on "National Preparedness" for war as having so many ships of war built or building and a regular army of small size to be backed up by the militia and volunteers in time of war.

Some so-called "statesmen" have declared that in case of trouble with a foreign power by the United States a million men would rush to arms over night, but they fail to say where the arms are to which they would rush.

If they had the arms, ammunition, uniforms, field, horse and siege artillery, horses, camp equipage, etc., in adequate quantities they would still be nothing more than an armed mob, that could not march, or fight or even do much running to get away.

Due to our great lack of regular officers for training purposes it would take at least a year to get this mob licked into anything like a semblance of an army and then probably several good lickings would be needed before the men could face regular troops on anything like even terms. This is a very wasteful way of making war or defending ourselves.

As we stand today, in the United States, we have a Navy of medium size consisting of a very good line of battleships, entirely deficient in battle cruisers, scouts worthy the name, and hydro-planes, and poorly equipped with cruisers, torpedo boat destroyers, submarines, etc. All of these auxiliaries are absolutely needed to enable the Navy to defend us.

While the regular Army of the United States is man for man as fine an army as exists, it is so pitifully small that it cannot even protect our Mexican border from invasion by marauding bands of bandits. In case of serious trouble with Mexico this army would have to be very largely expanded by recruiting up to war footing (which would reduce its efficiency by mixing a lot of green men), by calling out the militia and by calling out volunteers.

To repel an invasion of a first class power would mean the calling together of many more than a million men as the wastage of men in the early fighting would be enormous.

Without going into figures here it can easily be shown that we haven't on hand enough rifles, artillery, etc., to keep 200,000 men in the field let alone the millions to volunteer. This means that we must make them now or after war is declared, and our past history would indicate the largest part will have to be done after war is declared.

Great Britain, previous to the present war, was in the same condition we are in now, only not as bad.

Great Britain has made a lot of bad mistakes during the war, especially at the beginning, and we can learn a great deal from her mistakes by a little care and forethought and the expenditure of a comparatively small, though actually considerable, sum of money. The first essential is to start our arsenals at work with three shifts of men turning out standard articles we know we will need, such as rifles, artillery, etc. Second, manufacturing plants capable of manufacturing this needed material should be listed and the necessary gauges, jigs, blue prints, etc., prepared and kept on hand so that production can be started at the shortest possible time after war is declared. Factories for shoes, uniforms, hats, under-clothing, stoves, cooking utensils, etc., should also be included.

Food preparers should have samples of the proper sized tins and packages so no time would be wasted when they are called on for supplies.

Thirdly, the labor element must be taken account of and no man should be allowed to enter the army or navy who is more valuable in the supply of the fighting force than he would be at the front. Women would have to supplement the work of the men in very large part where possible, and England has shown that they can release many of the men in certain parts of the work for other duties.

Let us examine some of England's mistakes in the early part of the war and what she had to do to correct them.

1. Relying on volunteers.
2. Allowing indiscriminate enlistment.
3. Failure to realize the magnitude of the task at hand.
4. Lack of organization for the supply of troops at front.

5. Not making use of the resources of the country.

1. *Relying on volunteers.* At the start of the war volunteers in large quantities were obtainable and the military chiefs feeling the great need of men at the front took every man physically fit. As the war dragged on getting volunteers became harder and harder until now less than two years after the war started, conscription is practically in force. The same thing happened in our Civil War.

2. *Allowing indiscriminate enlistment* crippled many industries absolutely essential to the supply of the troops at the front. So much so, in fact, that a labor delegation had to be sent to the front to select and bring back to industry the men needed to run these plants, and train the necessary men and women to adequately supply the troops not only ammunition but all other stores.

One of the large electric supply companies of England is doing 50 per cent. more work now than it did previous to the war and late reports say that only 2 per cent. of this is commercial business. At present every available shop is at work 24 hours a day making munitions and the night load is now very heavy.

3. *Failure to realize the magnitude of the task at hand.* This charge cannot be laid against the British Navy which on the whole has been most efficient, saving the kingdom from any real fear of invasion. The charge does lie against the government, however, in nearly every other line. They were perilously slow in handling labor situations and organizing the various supply departments and building up auxiliary services such as the air craft arm, both flying machines and gas bag craft such as the Zeppelins and Parsevals.

Indeed, she is only just now building her first real lighter than air vessels.

4. *Lack of organization for the supply of the troops at the front.* At the beginning of the war there was a great stagnation of business, skilled men had been taken away and no substitutes provided. Specifications, blue prints, gauges, jigs, etc., and samples could not be procured in sufficient quantity to start manufacture promptly. When manufacture did get started, the labor unions gave trouble seeking increased wages, and objecting to any relaxation in pre-bellum conditions of labor, such as the number of apprentices allowed to each journeyman and the admission of women workers, and the amount of work one man should do or number of machines operated.

5. *Not making use of the resources of the country.* The war department having determined in peace times that the forged steel shell was better than the cast iron or cast steel shell, they would not use cast iron or cast steel shells after war had begun. This has caused a lot of men idleness at home and prevented the troops at the front from having an adequate supply of ammunition. The Germans have always recognized the cheapness of the cast shell and used it in very large quantities. They will admit that its fragmentation is not as regular as with the forged steel shell but its cheapness and speed of manufacture gives it a decided military value. Other instances of the same kind could be cited but this seems the most flagrant.

In civil affairs all of us believe in preparedness for we all support police and fire departments and most of us provide against accident by taking out insurance against loss by fire, burglars, sickness, accident and death.

In national affairs the great majority of us have failed to see the dangers ever present and so have failed to provide adequate insurance.

Adequate national insurance means an army and navy large enough to make it too dangerous for any one to attack us and overcome us before the resources of the country can be called on, and a proper organization of the country so that when these resources are needed they can be mobilized quickly and efficiently.

The latter means that every man in the country should be under the orders of the government and either ordered to the ranks or to the post of industry where his services will be most valuable for the carrying on of the war. Positions that can be filled by the women of the country should be determined beforehand and not left to be found after war occurs.

Every shop and manufactory should be listed and plans be made as to the changes required to fit it for the manufacture of munitions or supplies. Samples, specifications, blue prints, gauges, jigs, etc., should be on hand in sufficient quantities so that manufacturers could start on receipt of a telegram of less than ten words.

Every able bodied man should receive some military training so as to reduce the

length of training needed after war is declared as much as possible. This will be a good thing for the man himself incidentally as it will give him a better body, due to the regular exercise and setting up drills, and will train his mind to concentration and quick action, which many now lack.

This training should be given young men as it is much harder to train older men, and the time required for training can be better given when the economic value of the men is less.

This leads to the position of the large electric supply companies, such as our company, in the preparation for war and determines that during a war, unless this city is captured, all of the surrounding factories and machine shops would be worked overtime, and that our generating stations would have to supply them with power.

This large increase in load would require an increase in part of our working force such as firemen, and oilers, an increase in the construction and maintenance forces, and a decrease in all other departments.

If my premises are correct this proves that men employed by an electric supply company are of more use to the nation at home on the job than they are at the front, with a few exceptions.

Huxley writes:—

As I understand it, the class notes are now to be given over to personal observations and communications in regard to the general question of preparedness, with special reference to Technology's part in it, and I think it might be apropos to speak of the fact that the great trouble and the crying need is the lack of, and need for, accurate information.

Take the matter of the history of our own country—most of us know little about it and what we do know, if it was obtained through the ordinary channels and of course with the ordinary preparatory education up to the point of entering college, is absolutely incorrect and misleading. It has been my observation that most of the histories that are used in schools are inaccurate and that they seek to give the impression that the history of the United States, especially from a military standpoint, is one grand and glorious record of achievement and success. As a matter of fact, this is not the case. There is much in the history of the United States, especially its military history, that is anything but such that we can be proud of it. Blunders and failures are frequent and the fact that we have arrived where we are at the present time intact, is due more to good fortune than to good planning and execution. There have been many dark spots in the history of the country where the turn of a hair might even have disrupted and destroyed the country. Therefore, my view would be that the first thing to be done is to place before our younger students, the facts and give them a plain, unvarnished view of the history of the country; after that, the necessary remedies will be obvious and it is only to apply the remedy that remains. Therefore, I should say that one of Technology's duties to the National Government is to teach her students real American history, and to select and recommend those books where such accurate information can be found.

In a letter of a few days later, he refers to publications relating to preparedness, and says:—

I would suggest "Straight America" by Frances A. Kellor, with an introduction by Theodore Roosevelt, published by the MacMillan Company; also "Peace Insurance" by Richard Stockton, Jr., published by A. C. McClurg & Co., and "The Military Policy of the United States," a government publication by the late General Upton, are all excellent books. The Patriotic Education Society, Room 2002, 42d Street Building, New York, publishes a pamphlet entitled "Some Facts of American History," which is a condensation of General Upton's book, which would also be good.

Clapp writes:—

Having been connected with the Supply Department during the mobilization of the militia last June, I have read with great interest the different articles, which have been written about it.

Whether the regular service of the militia fell down or not is a small thing compared to the great fault.

When the troops were called by the President, did anyone think ahead that they must be fed, clothed and transported?

When the troops began to move, did any one care what kind of transportation they had? Were any army regulations about cars carried out?

When the troops were sent South in winter clothing, months afterwards returned home in summer clothing, did any one care?

When the troops were sent on a seven-day railroad trip, did any one care that orders were issued for five days' travel rations, and when these gave out, did any one care or see the men receive more?

On the Border when the automobile transport trains were tied up by civilian chauffeurs, did any one care if ice melted or troops did not receive their food until hours late?

On the Border, when food requisitions were filled with canned salmon in place of articles requisitioned for, did any one care?

I have talked with many railroad people and others, and the one answer I have received has been that troops received as good cars as they deserved. My own observation was that the state officials had only one desire, and that was to get rid of these troops as quickly as they could. I could not find that they helped much in getting any comforts for the men, or cared much if the men did not have anything.

No one cared much what happened to the troops as long as they were turned over to the government and thus gotten rid of.

This *don't care* is the great question in preparedness. The regular army, the militia or any other military organization, will always fall down until this question is taken care of better than it is now.

How can we make some one care?

Only by general conscription.

If you know that you or your son may be the first to be taken, you will begin to take some interest to see that you or he will be taken in the right way. Until the people wake up, the politicians will never do much, as they are afraid of railroads, business concerns, labor unions and thousands of other enemies of preparedness.

General conscription, which will cause every one to take some interest in beforehand preparedness, is the only preparedness worth wasting time about.

The present idea of "Let George do it" must be done away with and done away with forever.

The following men were present at the alumni dinner on the evening of January 6:—Brackett, Ballou, E. H. Clapp, A. D. Fuller, Newell, C. H. Parker, W. D. Parker, Stevens, and Tillinghast.

EDGAR A. BOESEKE

Under date of November 8, 1916, Winsor Soule, '07, of Santa Barbara, Cal., enclosed the following clipping from the *Morning Press* of September 5, 1916:—

"It is seldom that the death of a citizen of Santa Barbara causes such general sorrow as did that of Edgar August Boeseke, who passed away at his residence, 1820 Laguna street, Sunday evening, September 3, at 8 o'clock, after an illness of about a year.

"Mr. Boeseke was a native of Santa Barbara, born June 4, 1871. He was a graduate of the local high school, and later, in 1896, he graduated from the Boston Institute of Technology. September 5, 1905, he was married to Miss Eleanor Webb Willits of this city.

"The deceased is survived by his widow and by one sister and

three brothers—Mrs. Angie Wormser of New York City and Dr. E. J. Boeseke, C. W. Boeseke and Dr. B. C. Boeseke of Santa Barbara.

"Mr. Boeseke was a mason, and yesterday the flag on the Masonic temple was placed at half-mast in honor of his memory. He was also an active member of the Santa Barbara Polo Club, and was reckoned one of its most accomplished players. One of his proudest achievements in that line of sport was his part in the defeating of the Burlingame team in its tournament championship contest with the Santa Barbaras, several years ago, and he also did creditable work for his team in the noted victory over the English team at Pasadena.

"For twelve years Mr. Boeseke was president of Boeseke-Dawe Hardware Company, one of the leading commercial enterprises of Santa Barbara, and principal owner of that concern until he sold his interest, a few months ago, on account of failing health.

"As to Mr. Boeseke's personal attributes, it would be difficult to speak of them without seeming extravagant in laudation to those who did not know him—to his friends, the difficulty would be to give his merits and his admirable qualities their just appraisal. In business he stood before his fellows as an exemplary character, and in his personal relations with his friends and acquaintances he won the good will and respect of all with whom he mingled, from his boyhood days until the end of his mortal life.

"The funeral, to which friends are invited, will be held at 10 o'clock this morning at Gagnier's funeral church, to be conducted by Rev. Dr. L. Ralston, pastor of Central Universalist Church of Los Angeles. The interment in Santa Barbara cemetery will be private."

1896.

CHARLES E. LOCKE, *Sec.*, Mass. Inst. of Technology, Cambridge, Mass.

J. ARNOLD ROCKWELL, *Asst. Sec.*, 24 Garden Street, Cambridge, Mass.

This current issue is devoted to Preparedness. The secretary wishes to announce himself as an example of *Unpreparedness* in getting together material on this subject. The mining building of the New Technology was not ready in September as planned, and therefore work had to be done in the basement of Rogers through the first term. The moving took place during the latter part of the term, and the time and attention necessary for this has kept the secretary too busy to attend to his class duties properly. A few items of news have been gathered as follows:

Johnny Rockwell made his annual vacation trip to Tennessee in the fall to visit his parents. He tried to locate Smalley in Savannah, but Smalley was able to elude him and thus escaped a

visit from John. On his return he stopped off in the big cities to make a special study of the infantile paralysis situation. John has been expanding his house, his office, and his business, but his family still remains its former size. He reports that this has been the busiest fall that he has ever had. In the layout of the new Technology, the medical director's office (Rockwell's) is only three doors from the secretary's, so that the secretary and assistant secretary will see more of one another in the future.—Mort Sears called on the secretary in December. He is still with the U. S. General Land Office, but is temporarily stationed at Washington.—Charlie Hyde has sent the secretary two papers, one a report on the "Sanitary Quality of the Owen's River Water Supply," and another on "Stream Pollution and Present Status of Controlling Legislation in California." In addition, the secretary has received a copy of Hyde's voluminous and valuable report on "Possible Sources of Water Supply for Sacramento."—Backenhus has been appointed to the board commissioned to select a site for the proposed \$11,000,000 armor-plate plant, of which board Admiral Fletcher is president. Backenhus is making his headquarters in Washington and is very busy getting all the details of the situation well in hand.—Thanisch writes that he is still with the Cananea Consolidated Copper Company at Cananea, Sonora, Mexico. He says:

At any time it is possible we may receive word to get across the line, and if it comes in a similar manner to the last warning, several of us will be obliged to get to the border on foot and at night. The geographical position, however, is very favorable.

At the annual alumni banquet in January, Cummings, Dickin-son, Hersey and Rockwell sat at the '96 table, while Joe Knight, as an official, occupied a position at the head table.—Hersey reports that he has recently been elected treasurer and director of the Hersey Manufacturing Company, of South Boston, and likewise, trustee of the South Boston Savings Bank.—Cummings has been for eight years vice-president of Wells Brothers Company, building contractors. This company retired from the New England district at the end of 1916, and Cummings has formed a new company called Henry Cummings & Company, building contractors, and will conduct a general building business with offices in the Unity Building, 185 Devonshire street, Boston, Mass.—J. P. Palmer, who has been with the Lamson Company, Boston, for the past ten years, has severed his connection with it to take up the work of manufacturer's agent in New England.

Among the things left which the secretary found after the Saybrook Reunion, was a small leather case containing a few small vials, which was apparently a part of an automobile equipment. The secretary has tried to locate the owner, but has been unsuccessful. If any one of those who attended the reunion at Saybrook can claim this property, the secretary will be glad to deliver it. Another relic was a soft hat with the initials E. H. B. inside the

band. This apparently belongs to E. H. Barker, but the secretary has been unable to get him to acknowledge the ownership.

The following address changes have been received:

S. S. Bell, 80 Woburn St., Reading, Mass.; Mrs. Paul G. Burton, 12 Englewood Rd., Roland Park, Maryland; Miss Mary E. Dann, 2830 Main St., Buffalo, N. Y.; Joseph Hewett, 191 Prospect St., Brockton, Mass.; W. T. Dorrance, Railroad Bldg., New Haven, Conn.; A. V. Shaw, 12 Division St., Pittsburgh, Pa.; W. M. Stearns, 18 Ardsley Rd., Schenectady, N. Y.; F. A. Thanisch, Cananea, Sonora, Mexico.

1897.

JOHN A. COLLINS, JR., *Sec.*, 67 Thorndyke Street, Lawrence, Mass.

Nathan Hayward, VI, who for the past twelve years has served as engineer for the Bell Telephone Company of Philadelphia, and its associated companies, has been elected president of the American Dredging Company with headquarters in Philadelphia. He will still be retained by the Telephone Company as consulting engineer.

1898.

A. A. BLANCHARD, *Sec.*, Mass. Inst. of Tech., Cambridge, Mass.

The '98 men in and around Boston dined together at the University Club on December 20, the great attraction being Frank Coombs. Coombs has been for a number of years in Edmonton, Alberta, dealing in building materials and he would be there now except that the war has temporarily killed business in that part of Canada. He will return when normal conditions return. He certainly is most enthusiastic about the Canadian Northwest and he made all present at the dinner want to migrate there too.

Ed Chapin told us about the dyestuff situation, a problem which he himself is doing a great deal to straighten out.

Peavey gave some first hand information concerning the financial situation.

Twenty-two were at the dinner, viz., Learned, Perley, John T. Robinson, A. A. Packard, Hopkins, Blanchard, Russ, Coombs, Treat, Wright, Scott, Hiller, Wadsworth, F. M. Kendall, Barker, Peavey, Seth Humphrey, Chapin, Southworth, Davison, Dawes, and Goodrich.

In reply to a dinner notice we learned with regret that Stillings has been very dangerously sick for several months although he is now improving.

Recently, at the request of the editor of the REVIEW, letters were sent to a number of '98 men asking their views on the matter of Tech's relation to the question of national preparedness, and following are a number of replies:

"Pa" Coburn writes:

You ask me, what "dam builders" can do to help organize National Defense? Before I could attempt to answer such a question I should have to exercise my privilege as a Yankee and ask another; "Defense against what?"

If you mean defense against any present or future military invasion I would say first, that I am not at all concerned over such a possibility so long as we as a nation mind our business; secondly, we "dam builders" could, as I see it, do only what any other good citizen must do, lend our energies where they are most needed at the moment, whether as food for cannon or otherwise. We are not too proud to fight.

If, as your quotations from Litchfield's letter indicates, you mean by your question what can "dam builders" offer as a part of "Technology's Duty to the National Government," I would say that here we might find some common ground for discussion as I am firmly convinced that our greatest sources of danger are internal and unless we can overcome some of them in the near future, democracy will be proven a failure.

The two greatest of these sources of danger are, to my way of thinking, greed of the individual as exemplified in our labor unions and greed of communities as indicated by "pork barrel" legislation and, when we add to these the vapors of long-haired political reformers, things begin to look mighty serious.

To a "dam builder" pork barrel legislation, including most of our river and harbor improvements has been the most obvious sign of danger. With no general policy, no well developed course of procedure, no real investigation of the advisability of any particular piece of work, we go on year after year appropriating millions to "improve" rivers at the behest of some petty politician who thinks to make his fences sound by getting "something out of the government" for his constituency who, more often than not, get no real benefit from the undertaking.

Again, we "dam builders" sometimes wonder if the policy, or rather lack of policy, of our government in regard to the development of water power is a wise one. Should we go on burning up our limited coal supply and allow our water power to go to waste simply because we fear some bogey-man or corporation may make a dollar out of it?

Is our handling of land reclamation, either by irrigation or drainage, wisely done?

These are some of the matters toward which all citizens interested in the welfare of the country may well turn their attention and perhaps we as trained engineers are more definitely responsible if we fail to do what we can to educate the people as to the desirability of doing these things if they are to be done at all, in a systematic and efficient manner and with due regard to a broad general policy.

If we as a people can ever adopt any definite business-like policy on any one subject, we will in my judgment have made the first and most essential step toward National Preparedness for whatever is to come.

This letter from Robert E. Kendall, although not a reply to the request for opinions on preparedness, has nevertheless an important bearing on that question:

I am in receipt of yours of the 23d ult., and was very glad indeed to hear from you. It is quite true that my address has changed but the change is hardly a recent one, as I have now been at City Point, Va., for nearly two years.

Two years ago next month, I left the chemical department at our Wilmington office to become assistant superintendent at Hopewell Works City Point, Va., E. I. du Pont de Nemours & Company, in charge of guncotton manufacture.

At that time, Hopewell was still a dynamite plant, but had never been operated. The first plans for guncotton manufacture here were not very extensive as compared with final developments, but such as they were, a plant of considerable size was necessary. After getting "on the job" at the very beginning of the construction period, increasing business demanded rapid expansion of the plant until at the end, we had in reality fourteen complete guncotton plants in one, with all the necessary adjuncts, such as sulphuric, nitric acid, caustic soda, and crude cotton purification plants.

At one time, during the days of simultaneous construction and operation, we had

close to 25,000 men on the payroll. For the past four months, we have been down to a "rock-bottom" operating basis, and our payroll will average about 14,000 men. With the real beginning of manufacture, our operating organization underwent gradual development and my position became that of guncotton superintendent with general charge of the chemical laboratories, as a sort of side activity. As can be imagined, the necessary chemical control in such a proposition as this is tremendous and we have on the whole plant, located at points of vantage, eight different laboratories, employing in all over eighty chemists. Taking it all in all, the experience of being directly connected with such a gigantic manufacturing development during the entire period of growth has been most interesting, and valuable. To adequately describe the magnitude of the plant and its environment is beyond my humble literary powers, but as far as known there is nowhere in the world today such a plant devoted exclusively to guncotton manufacture.

R. M. Hughes, president, Miami University, Oxford, Ohio, writes:

I have received your kind letter of the 14th and am very deeply interested in the projects to which you refer. I had the pleasure of talking this over at considerable length with Godfrey and it strikes me as being a very big thing in possibilities.

Undoubtedly the brains of the country are its biggest asset, and no successful national movement, whether it be for war or peace, can be projected in the future without the coöperation of the brain power of the country. Not only is this true, but in a very large percentage of cases the most able men are the slowest to push themselves to the front, and it is peculiarly necessary that some organized plan be developed for keeping our National Government in touch with this form of national resource.

If the plan now under consideration is developed and if it is handled adequately at the Washington end, it will go further, in my judgment, than any other movement short of universal military training to put this country in a strong state of defense.

I wish you would put me on the list of subscribers to the *TECHNOLOGY REVIEW*. I have always wanted it, but some way or other have never gotten hold of a copy and don't know whom to address nor what the subscription price is.

I was deeply impressed with the Tech. Nothing in my travels in recent years has been so delightful and so surprising as my visit to the Technology buildings. They are grand, and are even yet scarcely worthy of the institution they house. I congratulate you men on what has been done there and hope and pray for even greater developments at this institution which I consider the greatest college in America.

Strickland writes from the works of the Peerless Motor Car Company, Cleveland, Ohio:

Answering yours of the 14th wish to advise that my connection with the Peerless Motor Car Company places me more directly in touch with things known in the Preparedness program than possibly the rest of my classmates. We have been furnishing 4-ton trucks to the Allies from the very beginning of the war. The total number now exceeding 5,000 and during the border trouble we have furnished Uncle Sam some 200 or more trucks for his purposes.

In the event of hostilities, therefore, it is altogether probable that we can be taxed to the utmost in supplying Uncle Sam with trucks for war purposes. That is, if his organization follows the methods of reasoning adopted by the allied governments which were to secure the most adaptable vehicles which had already been tried out in actual service for use during the war.

In the organization for Preparedness the most broadminded organization should be adopted so that advantage could be taken as far as possible of existing productions and conditions, so that the industries would not be tied up in the event of war by having to revolutionize their entire method of production to suit the whim of some committee. During the course of purchasing of trucks abroad the idea was conceived of switching off factories on to the production of one identical unit and this,

I believe, was tried out but resulted in utter failure and recourse had again to be taken to the use of vehicles already in production and successful on a commercial basis.

Another point to be taken into consideration is that the present and future commercial development of not only vehicles but probably other commodities required in war are made with leeways and allowances which are necessary for production on a large scale. This being made possible without interfering with the serviceability of the units and in case of war these same standards should be maintained without attempts on part of inspectors to begin a policy of hairsplitting which would jeopardize production.

Gen. E. M. Weaver writes from the office of the chief of Coast Artillery, War Department, Washington:

In reply to your request of December 14th that I give you something for the January REVIEW, in connection with Technology's duty to the National Government, I am inclosing herewith a few thoughts which have occurred to me as to what Technology has done for the Coast Artillery branch of the United States Army, and what she might be able to do in a more extended way by recent legislation in providing training for officers for the large forces which will be required in time of war.

With pleasant memories of my own associations in the laboratories and classrooms of the Massachusetts Institute of Technology, and with kind remembrances for all my old associates there.

INFLUENCE OF TECHNOLOGY ON THE NATIONAL DEFENSE

For a number of years Technology has played an important part in the instruction of coast artillery officers for duty as instructors in the department of engineering and mine defense of the Coast Artillery School. This school is maintained at Fort Monroe, Va., for the purpose of training officers and enlisted men for the technical work required in the Coast Artillery Corps.

In order that competent instructors might be available, advanced instruction at some recognized institute of learning was required. Technology was chosen because of its record for efficiency and thoroughness.

The course for coast artillery officers outlined by Professor D. C. Jackson comprises three main subjects, viz., heat engines, electrical engineering, and central stations and power distribution, covering a year's work. Congress authorized instructors of the Coast Artillery School to be sent to Technology for this one-year course. The first officer to be detailed was Major C. C. Carter, Coast Artillery Corps. He returned to the Coast Artillery School and instilled new life into the electrical course there. Since that time seven other officers, specially selected from those who have shown interest and aptitude for research work, have been sent to Technology for special work, having in view their assignment to duty as instructors at the Coast Artillery School; and the knowledge which they acquired at Technology has been spread, to a certain extent, throughout the service.

These officers are required to devote themselves to the special course, and are discouraged from pursuing additional courses not bearing upon these subjects, with a view to obtaining a degree at Technology.

Capt. F. Q. C. Gardner, Coast Artillery Corps, who at present is in charge of the Torpedo Depot, Fort Totten, N. Y., took this special course at Technology. He has charge of the purchase of all submarine mine material, including submarine cable, explosives, and all parts of the mine itself. This officer must accept, on behalf of the government, property to the value of many hundreds of thousands of dollars annually. Without his special training at Technology, he would never have been able to give to the government the efficient service which he has rendered.

Among Technology men now in the Coast Artillery Corps are the following: Major H. L. Morse, '09, Capt. G. R. Norton, '05, Capt. L. T. Walker, '08, First Lieut. F. M. Green, '09, First Lieut. K. T. Blood, '09, First Lieut. R. M. Riefkohl, '09, Capt. E. J. W. Ragsdale, '10, First Lieut. H. C. Davis, Jr., '11. Of these, Morse, Norton, Ragsdale, and Davis are detailed in the Ordnance Department. This department of the army has charge of gun construction and powder manu-

facture, and Tech men are especially suited for detail therein. Two graduates, Thomas, '07, and Eaton, '07, were assigned to the Coast Artillery Corps and detailed in the Ordnance Department, but have resigned to accept more remunerative positions with ammunition manufacturers.

It is believed that Technology's duty to the National Government requires that a Coast Artillery Unit of the Reserve Officers' Training Corps should be established at the Institute.

The one great problem of the present European War has been the supply of properly trained officers. This problem would be more acute here in the United States than abroad, because of our great potential strength which would come into being at the very outbreak of a war. We frequently hear of "a million men springing to arms between sunrise and sunset." Unless this million could be properly trained and led, it would only be fit fodder for the grim reaper.

Technology could and should do its share towards providing the commissioned personnel for the large army which would be organized at the outbreak of hostilities. On account of the technical work required of Coast Artillery officers, it is especially desirable that Technology should furnish a good percentage of the Coast Artillery Reserve officers required.

Section 42 of the National Defense Act, passed last June, prescribes:—

"The President may, upon the application of any established educational institution in the United States other than a State institution described in section forty of this Act, the authorities of which agree to establish and maintain a two years' elective or compulsory course of military training as a minimum for its physically fit male students, which course when entered upon by any student shall, as regards such student, be a prerequisite for graduation, establish and maintain at such institution one or more units of the Reserve Officers' Training Corps. . . ." Technology is close to the forts of Boston harbor, and the military authorities there would be glad to use the equipment to the maximum extent in order to coöperate with Technology in training students of the Reserve Officers' Training Corps.

Dr. Harold W. Jones, major Medical Corps, U. S. A., writes from the Army Medical school, Washington, D. C.:

I don't know that I can give you very much to work on except to tell you some of the work of preparedness that is going on with us. I think all Technology men with their scientific habit of thought must come to believe in universal service. The burden must be borne by all alike and it is not right that it should rest on the shoulders of the few. Money can buy this service from others up to a certain point but there are some things that money cannot buy and that is complete protection.

My work for the last few years has been along field service lines. I had command of an ambulance company in Texas for a long while and went into Mexico with the punitive expedition. My company was motorized while in Mexico and for several months I had charge of the evacuation of the sick and wounded over a long line of communications at one time 300 miles long. In all we covered many thousands of miles in our motor cars and ambulances. From there I was ordered to Washington as professor of tactics and as secretary of the Army Medical School. This school is engaged in the work of training young medical officers for their duties in the Army and all medical officers have to complete the course here before they are recommended for a permanent commission in the Medical Corps.

Some of the work I have also been engaged in, has been assisting in the preparation of an outline course of lectures which will probably be given at the different medical schools all over the country by medical officers on the duties of medical officers in the service, sanitation and hygiene. The object of these is to familiarize all medical men graduating from our schools with certain duties and obligations of the service so that as they come into the service in time of need they will not be ignorant of some of the vital groundwork which could not be taught them properly in an emergency mobilization. The Council of National Defense, has, I understand approved this and it will doubtless be carried out.

I have also been on a War Department Board for the standardization of motor trucks. This board consists of an officer of the Quartermaster Corps, the Ordnance,

Signal Corps, General Staff and Medical Corps and is in frequent collaboration with representatives of the Society of Automobile Engineers. Strickland of my class is one of their representatives and I had hoped he would be present at some of our meetings in Washington but so far he has not been here. I am on another board which is working on motor ambulances and I have also designed and helped to plan several features of our special cars used in the medical department. This work, together with my work of instruction and as a member of the general examining board here which passes on all of the candidates for admission to the school and the routine duties of the secretary here keep me humping.

I was in Philadelphia during October and part of November and erected and planned the Red Cross Base Hospital which was used in connection with the visit of Dr. Crile's unit of sixty-five doctors, nurses and other personnel. They came on from Cleveland and stayed two days and there was a demonstration for the Clinical Congress of North America at the grounds. Altogether about 70,000 people visited the encampment and we hope it did some good.

I don't know that along the lines of my own particular branch of the service which is medical and sanitary, Tech can help very much except in some of the collateral branches. I would be mighty glad to help in any specific way I can and was glad to get your letter.

Following are a few clippings concerning the Preparedness Program:

The National Academy of Sciences offered its services early in the year to the President of the United States in the interest of National Preparedness. The President accepted the offer and requested the Academy to proceed at once to organize the scientific resources of educational and research institutions. The organizing committee consisted of: Edwin C. Conklin, Simon Flexner, Richard A. Millikan, Arthur A. Noyes and George E. Hale (Chairman). Dr. Noyes, '86 and Dr. Hale, '90 are Tech men.

Under the National Defense Act (the Hay Bill) a Council of National Defense was created consisting of six cabinet officers and an advisory council of seven appointed civilians chosen because of their particular knowledge of the resources of the country. They are Daniel Willard, president of the Baltimore and Ohio Railroad, Samuel Gompers, president of the American Federation of Labor, Dr. Franklin H. Martin, Chicago, Howard E. Coffin of Detroit, Bernard Baruch, the New York banker. On this council is Dr. Hollis Godfrey, '98, president of the Drexel Institute of Philadelphia, and Julius Rosenwald of Chicago, president of Sears, Roebuck & Co. Dr. Hollis Godfrey, '98, an important member of the committee is a Technology graduate, and we note with interest that Godfrey has since been made chairman of this council.

Both Dr. Hale and Dr. Godfrey became immediately impressed by the great desirability of enlisting the efforts of the Institute through the Alumni Association, and talked the matter over very fully with the representatives of the association. As a result Dr. Hale appeared at the last meeting of the Council as did also Lester D. Gardner, '98, New York, representing Dr. Godfrey.

After considerable discussion the following resolutions were unanimously passed by the Council:

That in the opinion of the Council, Technology should assist as far as possible in promoting research and securing such information as may be of service to the National Government along the lines suggested by Dr. Hale and Mr. Gardner, and that a committee of four be appointed by the chair to make recommendations at the next meeting of the Council.

Apart from the matter of Preparedness we have several items of interest about classmates.

The following is written from Shanghai by Julius Nolte to Ira Abbott, '81, Technology Club of New York:

Your letter was a welcome adjunct to my mail from the States, as they say out in the Orient. I can readily understand the condition of depression in the building business, and we are affected seriously out here by the lack of material and delay in shipments. It is impossible here to know when to expect material, and sometimes there is a delay of from four to five months or more.

We have had a very busy year since my arrival, and by the looks of my desk this morning, I may be around the office Saturday or Sunday, but I am satisfied to dig in if there is anything to work for. I have certainly put my time in since being here, and during the summer have commenced to ease up a little, as I was feeling kind of punk. Things are now commencing to smooth out after the reorganization which took place about the time I came out here, and the outlook seems fairly decent. However, there is nothing like being near your own people and also being among a good lot of fellows whom we have known for some time.

As I look back a little I realize more and more what a genuine lot we have at the New York Tech Club, everyone seems to be right there with the boost. That is the real Tech spirit, which I do not think we have understood that we really possessed to such a degree as has been shown among Tech men, particularly in the past few years, during which time so many big things have been done.

Yes, Abbott, I am sorry to have missed the "opening," but we talked a lot about it here when we read the papers, which certainly gave us a good idea of the pageant and stunts. You all must have had "some" time.

Jacoby writes:

I do not know that I can say anything special in regard to the discussion on National Preparedness, but there is a little item of personal interest which you may care to hear.

After about fourteen years with the American Dyewood Company I left there the first of October to go with the National Aniline & Chemical Co., who are selling agents for the Schoellkopf Aniline & Chemical Works of Buffalo, the largest manufacturers of aniline colors in this country.

Paul Johnson writes from Altadena, Cal.:

My family and I motored out here by the way of Seattle, I driving all but a few hundred of the 5,000 miles we traveled. We just came out for the summer, leaving Milwaukee July 15, 1915, and to see the Expositions, but we decided to stay for the winter and then permanently. Since then I have made three long business trips East, and will start on another December 10. A large part of my work being correspondence and catalog work, I can carry on from here as well as anywhere. We are very much in love with this particular part of California, and hope you will all come (not all at once) and have a look. Drop a line to Altadena, or look me up in the phone book (Pasadena).

In the meantime, address me care of Johnson Service Company, Milwaukee, till February 21.

Colcord writes from New York:

During the past few years I have been associated with the vice-president and general manager of the United States Metals Refining Company, the refining company of the United States Smelting Refining & Mining Co. At the outbreak of the European War our office assumed further duties in regard to the selling of metals, and eventually on the first of this year we took over the entire selling of all the metals produced by the United States Smelting Refining & Mining Co., handling same under the name of one of the subsidiary companies, namely, the United States Smelting Company, Inc. This has meant that my own activities now include duties as assistant to the manager metal sales in connection with the sale of all of the metals, in addition to duties in connection with the operating and business management of our copper and lead electrolytic refineries.

1899.

W. MALCOLM CORSE, *Sec.*, 106 Morris Avenue, Buffalo, N. Y.
 BENJ. S. HINCKLEY, *Asst. Sec.*, North Station, Boston, Mass.

The secretary had a word from Frank Fowle in November, as follows:

I have successfully recovered from the Reunion, but further than that affiant sayeth not. I meet Huse and Watkins quite frequently and occasionally I get a glimpse of Hamilton and Gillson. The North Western Association, M. I. T., holds weekly luncheons at the Chicago Engineers Club on Tuesdays, where Tech men are, of course, always welcome. A week ago we had a pleasant visit from H. P. James who is at present located in Milwaukee.

Florian Lacaff, writes under date of December 2, that he has been transferred to Newport, R. I., after completing the Denver (Colo.) Post Office building, and is in charge of similar work there.—F. W. Grover who is at Colby College sends in the following:

Colby is a classical college, rather than an engineering school, although we are fitted to carry the men through alternating currents. We are a growing institution, 420 registration now, and there is oodles of work to do to build up the physics department.

When I was first here I was associated with two other Tech men,—Mott-Smith, '00, and G. B. Obear, '03. Mott-Smith now has charge of the physics department at George Washington University, Washington, D. C., and Obear has gone to Case School, Cleveland, Ohio. There is only one graduate of Tech here in town whom I have met,—Mussey, '02. Naturally there is no alumni association. In fact, I know of none nearer than Portland.

I am, as you see, rather isolated as regards Tech activities, although I get around to see some people at Tech at Christmas time, and I hear of some of the fellows through my brother-in-law, Witherell, '99.

I was no end disappointed not to have been at the Reunion last June. It came at the worst possible time for my work here—in exam time just before Commencement. In fact, my schedule here does not often fit in well with the alumni affairs.

We also have a short note from J. H. Walton:

I was very sorry, indeed, not to be able to be present at the class reunion last spring, but it came at the time when I was giving final examinations, and as a consequence it was absolutely imperative to be in Madison.

In regard to any class news, I am pretty much out of touch with the members of the class of '99. W. C. Phalen dropped in to see me the other day, and we had a very pleasant visit. It is the first time that I had seen him since we graduated.

You may be interested to learn that I spent the month of August at Plattsburg this summer. There were no '99 men there at that time, but I met a number of Institute men; I think there were about twenty-five in all.

Miles Sherrill reports that he is unusually busy at Tech working under the new conditions. He says it is going to be fine when they are all settled in their new quarters. He has some new courses to give which, of course, adds to his work just at the present time.—W. Scott Matheson says:

I was back in Boston in September with Mrs. Matheson, and my daughter Margaret. We made a short visit to the New Tech buildings and had hoped to go back again but was called away earlier than I expected.

When in Boston I called Ben Morse and Hinckley on the 'phone and visited a short time with them. Called on Adams but he was out of town. Lunched with Harry Morse and later called to see him at the Arsenal. Tried to raise you in Buffalo and regret that our time was so short I could not look you up. This was our first visit East in ten years. We visited our old homes in Nova Scotia.

Seattle is getting her portion of the shipbuilding boom. Have now three large yards in operation and two more in construction. Have been made secretary of the Puget Sound Tech Association. We meet for lunch every month and have a general meeting once during the winter. C. M. Lewis is the only '99 man besides myself in this district.

Extend an invitation to any of the boys that come out this way to let the secretary know and we will give him the glad hand.

The following personal item of news from Everett H. Hinckley will be of interest to other members of the class:

I am now preparing a set of 133 different colored yarns to be used in testing the applicants for enlistment, and the already enlisted men of the U. S. Navy for defects in color vision. I am advised by the Navy Department that these sets have been impossible of procurement up to this time in the United States, being imported from Germany. Tech training put me in a position to handle this problem in such a manner, that the Navy Department advises me that the results are superior to the imported.

Lawrence C. Soule is now engaged in special research work for the American Radiator Company at their laboratory at 1807 Elmwood avenue, Buffalo, N. Y.—Charles B. Page, formerly vice-president and general manager of Van Blerck Motor Company of Monroe, Mich., reports his engagement as general manager of the Loew-Victor Engine Company of Chicago, Ill., builders of Duesenberg marine, aeroplane and automobile motors. It is reported that the Loew-Victor Engine Company will shortly erect a large new factory in the East.—The *Electrical Railway Journal* of December 30, has the following account of J. Walter Allen's appointment as electrical engineer of the Boston Elevated Railway:

J. Walter Allen has been appointed electrical engineer of the Boston (Mass.) Elevated Railway, to take effect in January.

Mr. Allen is a native of Newtonville, Mass., and was graduated from the electrical engineering course at the Massachusetts Institute of Technology, class of 1899. His entire professional career has been associated with the Boston company, and he has been actively engaged in every phase of its electrical work. He entered the employ of the road under the electrical administration of Roger W. Conant, and spent four years in the cable-testing branch of the service, in two of which Mr. Allen was in charge of this department. In 1906 he was appointed assistant to John W. Corning, then in charge of the electrical department, and since November 1, 1915, has been acting electrical engineer with headquarters at the Albany street shops of the company in Boston. Mr. Allen has borne a responsible share of the work in connection with the electrical equipment of the subways and other rapid transit lines of the company, as well as that associated with surface line operation, and has been closely identified with the installation of the alternating-current transmission system of the road, the provision of substations and direct-current distribution plant. He is a member of the American Electric Railway Association, New England Street Railway Club and an associate member of the American Institute of Electrical Engineers.

Lee R. Loveman's address is now Hotel Seymour, Lynn, Mass.

Miles Sherrill has the sympathy of the class in the sudden death of his father on January 24:

Benjamin Mason Sherrill, known in the West and the Middle West as a commission paper merchant, with a home at 83 Longwood avenue, Brookline, died on Wednesday afternoon in the Deaconess Hospital, after an illness of three days. He had started on a business trip, when a cold developed into pleurisy and pneumonia. Mr. Sherrill was born in Louisville seventy-two years ago. He received his early education there and in that city married Miss Lilla Miles. For the past forty years he had made his summer home at Marshfield, and fifteen years ago he removed permanently to Brookline. He is survived by a daughter, Miss Carrie A. Sherrill of Brookline, and four sons, Arthur Sherrill of Philadelphia; Everett A. Sherrill, a supervisor with the Revere Rubber Works; Miles S. Sherrill, associate professor of chemistry at M. I. T., and Edgar B. Sherrill of the MacGrath-Sherrill Press.

1900.

WILLIAM R. HURD, 2D.

RICHARD WASTCOAT.

PERCY R. ZIEGLER.

INGERSOLL BOWDITCH, Sec., 111 Devonshire Street, Boston, Mass.

At the October meeting of the Alumni Council it was voted that the Council should spend a good part of its time this winter in seeing what could be done to organize the resources of Technology as a help to the Government of the United States in times of emergency. It was planned to find out what each graduate could do best in case the country was compelled to enter a war with a European country or even with Mexico.

In November a meeting of the class secretaries was held and many interesting discussions took place as to the best methods of obtaining information concerning the capabilities of the different members of the class. It was decided to devote the next number of the REVIEW to this subject and the secretaries were instructed to write letters to their classmates asking for suggestions and information.

The secretary of this class wrote thirty letters to members whom he thought would be interested in this subject and glad to express their ideas. His letter was either not clear as to the information wanted or the members of the class of 1900 are too modest, for only eight responded. Those who took the trouble to write have made some very good suggestions as the following will show.

Owing to the rush of business due to the secretary taking a vacation after Christmas, Davis' letter did not come too late and here is what he says on the subject of organizing Tech's resources:

I have been too long in answering your 1900 letter of November 25th regarding the good movement of the Alumni Council in mobilizing Tech's abilities for national use. While my answer is too late for the REVIEW—and small loss to it—I am sending this line to complete your class file for future reference.

Now, as a teacher, I cannot, I suppose, offer much of personal value. I am, however, also engaged as registrar of the institution here, and so have not only some familiarity with the use of card and other filing and record systems, but also a bit of experience in working out various problems of organization, schedule, etc.

Dick Wastcoat tried to get out of expressing an opinion by asking a lot of questions. Perhaps some member of the class can answer him:

I have reread your letter at least six times, one time each for the six pages you want me to write.

The idea contained in this letter is fine. It would seem to me, from the meagre amount of information at my command, that primarily it is an idea of trying to do something, and yet not knowing what is to be done.

In connection with the fourth paragraph; you asked me to write stating subjects I would be glad to take up in a national emergency. First, I would ask you what subjects are necessary to be taken up? Second, you ask what matters I think ought to be looked into. How can I tell you this unless I know the general conditions where we are weak, and such knowledge can only be arrived at after a general survey. Third, you ask for suggestions in order that the Institute may take the lead in assisting others to put this country in a position to protect itself against an invading force. How can the ordinary man, situated like myself, who does not know the conditions, make suggestions that would be apropos unless the entire situation was spread out before me, so that I would have the exact knowledge of what should be done.

I thoroughly believe that a survey should be made of the whole country, finding out what we have and what we have not, and what is necessary to have and the best method to obtain what we need.

Now, this means a general survey, and when we find out just where we are at, and just what is necessary, then we will have a basis on which to work, and I will be able to answer your questions.

I do not believe that any answer I might make until I have a complete knowledge of what we have and what we lack, and a policy is completely outlined of what we want to obtain, would be worth the paper it is written on.

We all know we need a sufficient army, and a sufficient number of trained men who can be called into the army in time of need, a completely outlined system of supply and transportation and sufficient amount of armament in reserve and enough that is always in readiness, a sufficient number of submarines at the earliest possible moment, a sufficient patrol squadron, and inland waterways, extending up and down the coast, which will allow intercourse between our large cities, so that the submarines on defensive work can pass from one point to another without being subjected to destruction by the enemy.

To go into further detail along lines you suggest I feel is a waste of effort, until we know where we are at.

The work you say the National Academy of Science is taking up should be taken up by a national committee who has this situation completely in hand, so that there will be no duplication of effort.

It would seem that if the graduates of the Institute made an individual effort it would be time wasted unless it was directed by some national body.

Blair was unable to give a great deal of help on the subject as he was afraid that in case of a national emergency people would be very patriotic and give their inventions to the public without hiring a patent lawyer to look out for their interests. His comments on the Reunion are well taken:

I thoroughly enjoyed the Reunion last spring, particularly meeting the fellows again and trust that if any of you get down this way you can come around to see me. I was much interested in the class yell proposed by Merrill and published in a recent TECHNOLOGY REVIEW. The spirit was certainly fine but it was hard to tell whether it was a yell or a thesis.

Z. M. Briggs is always a very satisfactory person to correspond with and you are always sure of an answer and generally get what you ask for:

My life has been spent in railroad work, mostly railroad engineering, though I have also gone into freight handling lately.

No doubt the government has made a study of railroad operation for war or strike conditions, and I would gladly volunteer to place my services at its disposal in an emergency.

I joined the American Legion sometime ago, which aims to provide a registration of technical men, etc.

I would be pleased to coöperate with you in anyway.

Tom Perry is another standby and from what is said concerning the red tape that has tied up the troops on the border this last summer it is clear that he could spend many profitable days working out a better system of caring for the troops without so much use of tape. Bowditch sympathizes with him on the subject of building a new house as he experienced that trial last winter. He only hopes that Tom enjoys his after it is built as much as he does:

I am heartily in favor of a demonstration, on the part of Technology, of her resourcefulness should this country be plunged in war. So far as I am concerned personally I hold, what is in effect, a retired or reserve commission as captain in the Nebraska National Guard due to four years of training under an army officer during my college course.

So far as my own service is concerned would state that I do not know where I could be most useful, but my personal preference would be for a chance to unwind some of the army "red tape" and put some real business system into the office and purchasing departments. The army is so immersed in "red tape" and impossible detail that a war would force the government to adopt drastic efficiency methods in order to get service. This is not because I would not willingly fight in the ranks (although I would not make quite so large a target for bullets as you would), but because I believe my experience at the Library Bureau and the Macey Company would give me a foundation for this efficiency work that would make me worth more there.

You asked about my change of address and in reply would state that I have just built a new house in the suburbs five miles out where my youngsters can have seven acres to work off their exuberance, and I assure you that my three youngsters need at least that much space. We just moved in last week, and, if anyone tells you what Sherman said war was, you are at liberty to believe that building and moving is to be described in similar terms. We are gradually merging into a condition which might be described as Purgatory and eventually hope to reach the regions that we are told offer all the comforts and pleasure for Eternity.

Although Macpherson has been in the telephone business for nearly ten years he does not seem to think that it has fitted him to do anything in that line to help his country. His former experience in drafting for a ship building company might be more useful. It looks as if Macpherson was too modest.—Seaver writes that he will be glad to be of any assistance but does not know what he is best fitted for. From what is known of Seaver there is no doubt that he would be a very valuable man in most any emergency.—One of our classmates who is now in the government service and who is a great credit to the class and to Technology writes as follows:

Until the millennium is somewhat nearer than it apparently is now, the United States should be in much better position than it now is to enforce its rights. I believe in a powerful navy and a standing army of at least 300,000 men, with a com-

portable surplus of officers of all classes to direct the enlarged force required if hostilities threaten with any first class power.

I am a firm believer in some form of universal military training. It seems to me that the habit of obedience is sadly underdeveloped in the average American. I think a cross between the present time British and American "Individualism" and German *Kultur* is what we need.

I also believe that the first steps which have been taken toward industrial mobilization are really advances, and I hope that we will not relapse into our previous state of indifference, leaving almost everything to be improvised at the last moment, or, what is more likely, gone without.

This subject of organization of national resources will be before the alumni for sometime and all suggestions will be gratefully received by the secretary.

We note in the *Electrical World* date of December 30, 1916, the following item of interest:

Cyrus Corliss, for the past eleven years assistant to the chief engineer of motive power and rolling stock, Boston (Mass.) Elevated Railway, has been appointed construction engineer of the department of power. Mr. Corliss entered the company's service in 1900, after taking a special course in electricity at the Massachusetts Institute of Technology, and reached the post of assistant to the electrical engineer before being transferred to the office above named.

The annual dinner of the Alumni Association held on January 6 at the Somerset Hotel was well attended, the following members of the class being present: Fitch, Osgood, Russell, Stearns, Lawley, Leary and Bowditch. Full accounts of the dinner appear in another part of the REVIEW.

The secretary has just received the notice of the death of Claude U. Gilson who died at his home on December 27, 1916. Owing to the lateness of receiving this notice the secretary was unable to do anything about attending the funeral or sending flowers.

The following are recent address changes: Philip R. French, 276 South Main St., Andover, Mass.—George M. Holbrook, care Armour & Co., Chicago, Ill.—Thomas D. Perry, R. R. No. 1, Cornstock Park, Kent County, Mich.—William C. Saunders, Bend, Ore.

1901.

ROBERT L. WILLIAMS, Sec., 107 Waban Hill Road North, Chestnut Hill, Mass.

This is to be "Preparedness number" but the secretary is not very well prepared as he has not heard from any of the fellows recently. By the time you read this, our annual class data sheet will be in your hands and he hopes to hear from a goodly number to get news for the REVIEW.

An unusually small number of '01 men showed up at the alumni banquet at the Somerset in January, the faithful ones being Brush, Hall, Monaghan, Derby, Taft, and Williams.

Langdon Pearce is division engineer of the sanitary district of Chicago and does consulting work on sanitary and hydraulic

problems.—Leonard S. Florsheim is secretary and treasurer of the Kabo Corset Company of Chicago.—Willard W. Dow is assistant treasurer of the Stone & Webster corporation.—L. D. Chandler is a member of the firm Rideout, Chandler, & Joyce, engineers and piping contractors, and is located in Boston.—Walter A. Read is president of Read Legal & Mercantile Agency, Boston.—Allan W. Rowe has recovered from his accident of last June when he broke his leg, and is as lively as ever.—W. D. Pepperell travels all over New England in connection with his work in the selling department of the Draper Company.—W. J. Sweetser is professor of mechanical engineering in the University of Maine.—N. L. Danforth is president of the John Danforth Company, general contractors for mechanical equipment at Buffalo, N. Y.—Greta Gray is an instructor in the University of Illinois. Her subjects are:—Household science, house planning and sanitation, house furnishing and dietetics.—Walter M. Curtis is consulting engineer for the Fiberloid Company, Indian Orchard, Mass.

The following recent changes in address have been received:—Warren F. Blucker, Boulder, Col.—William E. Farnham, 135 Broadway, New York, N. Y.—John R. Anderson, Jr., 69 Hamlet Ave., Woonsocket, R. I.—T. H. Taft, Cypress Road, Wellesley Hills, Mass.—Alexander J. Taylor, Williamsburg, Va.—Albert W. Higgins, 621 Summit Ave., Milwaukee, Wis.—A. P. Merrill, 5339 Oakland St., Los Angeles, Cal.—Henry C. Morris, 1868 Columbia Road, Washington, D. C.

1902.

FREDERICK H. HUNTER, *Sec.*, Box 11, West Roxbury, Mass.
J. ALBERT ROBINSON, *Asst. Sec.*, Box 135, Canton, Mass.

At the annual banquet of the alumni association in Boston January 6, the '02 table brought together Fitch, Rob Whitney, Walker, the class secretary, and to the delight of the others, Charlie Kellogg who was in town on a business trip from Keokuk. He had many interesting things to report about the great dam and power station but chilled our hearts a little with a story of 10 inches of ice on the lake so early in the winter.

Burt Hollis, of the Eastern Talc Company, Randolph, Vt., has been appointed by President Wilson as a representative from Vermont on the Industrial Preparedness Board.—J. Murray Walker was recently elected treasurer of the Tilton Woolen Mills at Tilton, N. H.—Two classmates have been mentioned in a recent list of patents issued. Bob Brown received patent No. 1,192,163 last July on a process he has developed in connection with the paint industry and Frank Harris two patents, No. 1,190,160 and 161.—Lind has moved from Denver to Golden Colorado on account of the change of location of the Bureau of Mines.—Harold Pope is connected with the Wright-Martin Aircraft Corporation. His

business address is 60 Broadway, New York City, and his residence Northumberland Apartment House, New Hampshire avenue and V street, N. W., Washington, D. C.—Frank Reed's address is now 430 South Broadway, Los Angeles.—At the annual exhibition of the Allied Dairy Interests of Massachusetts held in Springfield, January 9–12, Norman Borden carried off two of the first prizes, one for the best dairy butter and one for cottage cheese.—Arthur Hall is now treasurer of the Priscilla Cleansing Company with an office at 188 High street, Boston, and an up-to-date plant in Roxbury.—Albert Haskell sailed in December to take a position in Argentine.—Robinson has left the Underwriter's Bureau where he has been several years and is now special inspector and engineer for the Improved Risk Department of the New England Insurance Exchange.—Arthur Nelson is now located with the Trussed Concrete Steel Company of 141 Milk street, Boston, having been transferred from the Seattle Office of the T. C. S. Co.—Roland Pendergast has been traveling in China to judge from post cards received at class headquarters, —these having come from Peking, Shanghai, and the last one post-marked November 25 from Saigon in Indo China. Pendergast is by this time en route for India where he plans to spend some two months before starting for home. We expect to see him in Boston sometime in the spring.—Chauncey Manning was married on December 18 to Miss Mabel Webber of Boston. Mr. and Mrs. Manning make their home at 133 Springfield street, Springfield, Mass.

The following clipping from the *Electrical World* for November 4 will be of interest. We regret being unable to reproduce the splendid picture which accompanied it:

William A. Durgin, chairman of the lighting committee of the Commonwealth Edison Company, Chicago, whose lectures on lighting have been features of several recent conventions, was graduated from the course in electrical engineering of the Massachusetts Institute of Technology, class of 1902. Immediately upon leaving college he joined the Stone & Webster organization. Until December, 1904, he remained with this firm, finally becoming assistant lighting superintendent at the company's Terre Haute (Ind.) property. He later took a position in the testing department of the Commonwealth Edison Company and in 1909 was made assistant chief testing engineer for that company. In June, 1916, when the Commonwealth Company's lighting committee was organized by Vice-President Ferguson to promote economic advance through the increased consumption of raw light, Mr. Durgin was appointed to his present position, that of chairman of the lighting committee. Mr. Durgin has contributed a number of technical papers to the literature of the industry. Two recent lectures, "Lighting—By-Product, or Buy Product," presented before the N. E. L. A. at Chicago last June, and "Controlled Light and the Satisfaction of Life," delivered during the I. E. S. lecture course at Philadelphia in September, have attracted particular attention. He is also the author of a book on "Electricity, Its History and Development."

We have just learned of the birth of Howard Kellogg who arrived September 11, 1915. He is reported to be a husky and rapidly growing youth. This makes three children in the family of our former secretary, a girl and two boys.—We are also glad to

chronicle the birth of Elizabeth Shedd, who arrived in Arlington on October 29 last.—Kenneth Lockett has recently returned to Chicago after some six months spent on the Mexican border as an officer in the Field Artillery, Illinois National Guard. Ken reports many interesting experiences of his sojourn on the Rio Grande. As his old firm, the Orr & Lockett Hardware Co., has retired from business, Ken is looking the field over to see what he will tackle next as a business proposition. He can be reached for the present through the University Club, Chicago, Ill.

Class gatherings will probably be held in Boston and New York before this copy of the REVIEW is received, and a decision will have been made in regard to holding our fifteenth reunion in June. Notice of these events will be set forth in an issue of the class *Retort*.

1903.

M. H. CLARK, *Sec.*, 1790 Broadway, New York, N. Y.

R. H. NUTTER, *Asst. Sec.*, Box 272, Lynn, Mass.

We all had good intentions, "but"—; accordingly the '03 news consists mostly of information about the wanderings of the restless members.

We have, however, one benedict that the secretary knows about—Sammet—who was married Thursday, December 7, in Madison, Wis., to Miss Anita Reinking, the daughter of Mr. John J. Reinking.—Mr. and Mrs. LeRoy B. Gould announce the arrival of a daughter, Miss Marjorie Davis Gould, on November 16. Mr. and Mrs. Gould's address is 759 Pine street, Manchester, New Hampshire.

Address Changes.

Arthur F. Bennett, 135 Madison Ave., New York, N. Y.—Frank G. Cox, Edge Moor Iron Company, Edge Moor, Del.—Frank R. Farnham, care McGraw Publishing Company, 239 West 39th St., New York, N. Y.—Samuel A. Fletcher, 1200 South 13th St., Birmingham, Ala.—William M. Gilker, S. W. Tel. & Tel. Co., Dallas, Texas—Herbert M. Morley, 119 Cedar St., Newton Centre, Mass.—Frank DeG. Rathbun, Rivermines, Mo.—Walter Sohler, 1755 N. Normandie Ave., Los Angeles, Cal.—George D. Wilson, Union Hotel, Akron, N. Y.

1905.

GROSVENOR D'W. MARCY, *Sec.*, 246 Summer Street, Boston, Mass.
CHARLES W. HAWKES, *Asst. Sec.*, 246 Summer Street, Boston, Mass.

Frederick G. Bennett and Miss Grace Kellogg McCabe were married on November 4, at Southampton, N. Y. In reply to a periodic prod Bennett writes:

Well I should say that I have some news of myself. Got a new job and a wife all in one month. After ten years on the Catskill aqueduct, I quit just before they could lay me off, and connected with a consulting engineer in my home town, who is making a specialty of golf course work, and is busy all over the country.

William Livingston Spalding, Jr., arrived on December 8, but his dad writes they are going to call him Pete—for euphony and distinction.—Charles Saville brought his family to Boston for a short visit early in December. Charlie is director of public health of the city of Dallas, Texas, and sent in a very interesting bulletin reviewing their work for the past year and outlining a progressive program for 1917.—Jack Holliday also made a short visit to the Hub, fortunately timing it to help '05 celebrate at the alumni banquet. Jack sold his drop-forging business last June, and is now doing consulting work.—A new address just received is, H. M. Nabstedt, Resident Engineer, Oklahoma City Water Supply System, Oklahoma City, Okla.—Edward C. Smith is no longer with the Canadian branch, but he is now with the laboratory at the factory of the National Carbon Company; address, 318 Morrison street, Fremont, Ohio.—“Casey” Turner writes:

After being with the Iron City Engineering Company for about thirteen years (the only job I have had since leaving the 'Stute), I am starting out for myself as the Turner Engineering Company,—Electrical Construction. My new address is Dime Bank Bldg., Detroit, Mich.

C. B. Rhodes writes:

Have been moving about in the past few years with consistent regularity. Am now in shipbuilding business as assistant to general manager of the Seattle Construction and Dry Dock Company. This business is certainly going some—every yard in the country, including ourselves, loaded with work, and prospects good for several years to come.

As this is the Preparedness number of the REVIEW, postals were sent to all members of the class who occasionally reply to correspondence, asking if they cared to express any ideas in this direction. Several did, as follows:

Grafton B. Perkins of the Resinol Chemical Company, Baltimore, Md., writes:

That “human interest” stuff in your postal shows you have the advertising instinct. Think of it! You and that bunch of highbrows sitting around your frugal board, sobbing your hearts out because we expatriates don't pour class news into your shell-like ears in the desired quantities. Ah, how my heart aches for you, you poor, dear things!

I have but one concrete idea on the subject of Preparedness, which I believe I share with almost every normal, thinking American, outside of Congress—let us prepare before it is too late! To a congressman the \$175,000 post-office for Newhope, N. C., or the dredging project for Spy Pond is naturally more enticing, but I pray the Border fiasco will gradually drive home even to such a one that, when this war is over, we will be hopelessly at the mercy of any power which cares to raid us. To imagine the almost unimaginable, think what would happen to us if, four months after peace were declared, Canada should decide to invade us, with her 500,000 veterans, equipped with real cannon, real ammunition and even possessed of enough army boots to give *every man a pair*. What in Heaven's name could prevent their sweeping from border to border and from coast to coast?

Personally, I believe in universal military training, and am perfectly ready to stand my share of the cost, in increased taxes or undergoing such period of training as might be—and I think should be—appointed for those of us who are beyond the age of “conscription.”

As to what part Tech men should play—those who have stuck to their lasts obviously fit into special engineering berths. But the rest, who like you and me, have drifted into other pursuits, can expect to do little more than any other educated business man.

Whatever happens, however, I am sure that we shall not have to be reminded that “1905 expects every man to do his duty.”

P. S. In event of war, we have our Joffre in F. S. Elliott!

Robert R. Clark of the George M. Clark & Company, Chicago:

In regard to Preparedness, it has seemed to me for some time that the one important thing for this country is universal training. If this can be brought about, other measures for adequate equipment in guns and reserve supplies will, I think, follow.

All thinking men, all Tech men I feel, should talk universal training as the important thing for our country to put us in a safe position.

The fact that such service in its effect on our youth would be an economic gain by its lessons of discipline, more than offsets, it seems to me, the time devoted to the work.

A month in the August, 1916, training camp at Plattsburg confirmed for me my feeling in regard to universal service.

G. M. Bartlett, Camden, N. J.:

I had a little experience last summer trying to get the inventory for the Naval Consulting Board. Most manufacturers were willing to give the desired information, but some were too busy. The few who are so disposed should not be burdened by having Uncle Sam's contracts to fulfill.

It seems to me that the best way for Tech men to promote Preparedness is through the professional societies.

I presume that most of Tech's most influential graduates are members of their respective societies.

By joint action of these bodies, results may be obtained that otherwise will only come of necessity. For instance, if, in our large industrial centres, coal were coked and the coke used for water gas or producer gas, we would recover a large per cent. of the nitrogen of coal as ammonia. This would be very important to us agriculturally, and to the chemical industries. It would be important to the industries because electrical power can be made from either water or producer gas, and much greater efficiency realized. If the chemical, civil and electrical engineers will stand together, insisting that fuel be used in this way, we will have achieved something very important towards industrial and military preparedness.

We read a good deal about our developing potash industries. It is a fact that at present we cannot compete with Germany's deposits, but by giving potash producers a bounty for each ton produced, we could develop our own resources. I do not believe in a protective tariff on potash, because we can use all we can get at any price, but we can very well afford to pay the cost of having a source of potash of our own.

My ideas are principally those of a chemist but I am ready to help the engineers put through the plans which are bound to work out for our national good.

A. H. Abbott, General Electric Company, Schenectady, N. Y.:

I attended the July Camp at Plattsburg last year, and I approve of the plans which are in preparation towards getting Congress to authorize universal and obligatory military training.

I am personally writing, this spring, to all my business friends endeavoring to get them to become members of the National Security League, and to obtain their coöperation in spreading the idea of National Preparedness.

Henry A. Buff, Jamaica Plain, Mass.:

Some of the nations engaged in the great war thought they were prepared and were, others of the nations believed they were prepared but were not. Many people in United States realize that United States is very much unprepared in several different ways. Hence the present interest in the subject of Preparedness. Persons with certain definite views on Preparedness should therefore make them known, so that any good ideas which they may contain may be utilized.

First, then, as regards the army. Even before the war many persons knew the standing army of the United States was about half as big as it should be to properly man the coast defenses and have a small surplus. So far as the standing army goes, that is all that is essential in time of peace. It would amount to about 250,000 men. United States spends on her tiny army as much in normal times as Germany on hers. Yet the difference in final results is almost inconceivable. Just take one illustration—when some American soldiers were surprised by Mexican raiders in the night. They were so unfamiliar with the mechanism of a machine gun that they could not work it, even though they had been for months in close proximity to war.

The answer to the question, "Why do not more men enlist in the army?" is that more inducements should be offered. This inducement should not take the form of more pay otherwise it would stagger even the broad shoulders of Uncle Sam. It is at present the highest in the world. It should be better living conditions so as to insure more self-respect and get better grade of men. For instance, besides the working or war dress of khaki, there should be a dress uniform which could be worn three fourths of the time. Another inducement might well be that men should not be discriminated against because of being in uniform by being barred from theatres, etc., etc. It is inducements of that kind that should be offered, which mean more than money.

Now in regard to army in time of war. Any nation can very easily, by universal compulsory military service, get an army of 10 per cent. of the population. By great exertions it may even be raised to 20 per cent. By extreme exertions and by lowering restrictions as for instance in Servia, 33 per cent. can be obtained. The United States has 100,000,000 inhabitants. Ten per cent. of that is 10,000,000 which is a much larger army than necessary. Therefore, I do not believe compulsory service is needed to get an adequate number of men. Voluntary enlistment in a just war would give an ample number. What I do believe is, United States should adopt universal compulsory military training (not service); permit no exemptions on account of wealth or influence; have, say, one or two solid months training in a year for about two years; let there be a dozen conveniently located assembling places; have men from one state mixed up with those from others so as to increase the national unity; have lessons or lectures by competent speakers on various military subjects including patriotism; evolutions of groups should be taught so as to preserve order and prevent chaos and also for the exercise; camp duties should also be taught; handling of the rifle might be taught but is not wholly necessary. A lot of subjects could be put on a voluntary basis, men taking up those things that appeal to them.

It might be a legitimate complaint of army officers that they cannot wait till actual war comes before organizing an army. To meet that objection and still preserve the voluntary service feature which I consider essential in a country like United States (unless it be in a life and death struggle), I would recommend something like this: Let persons while still in the training camps be given an opportunity of enlisting and be assigned places and duties, etc., in an army which would begin its active service whenever ordered to do so by the President in any emergency which should turn up. The national authorities in such case would not feel as helpless as they do now in cases of emergency and still that principle of voluntary service would be preserved.

As I see the problem it is not nearly as difficult as the problem of European countries where practically full strength must be reached in a few days. Here the problem is to have a medium-sized force all the time and when trouble is acute start preparations so that in three months a good-sized force will be available. With

a good foundation laid by universal training, the finishing touches can be given in case of emergency in half or a third of the time needed for training from the ground up. The problem to a great extent is up to the regular army officers to plan methods of mobilization so that things will run smoothly instead of getting all tangled up.

Secondly, in regard to war materials of thousands of different articles from field artillery to clothing and commissary department, there is plenty of raw material in the country to fall back on. But they cannot be worked up in a day. It takes months, in some cases even years, to get factories altered and new special tools designed and made before even the first article of a certain type is made.

Third, concerning the navy. We have spent approximately as much as Germany and have approximately as much to show for it. Money spent in that direction is not wasted because that is our first line of defence and all our potential enemies but two would have to come overseas and as regards those two, they would not probably mobilize any faster than we. Such questions as speed of vessels, whether we shall have battle cruisers; range of shooting, etc., are all technical problems which the proper Naval officers are better able to deal with than a civilian.

Fourth, the war and the lack of vessels to transport United States commerce has demonstrated that the United States should have a larger ocean-going merchant fleet. The remedy for that condition is a campaign of education of the population and congressmen from the interior and the South as to its great value.

A large merchant fleet also offers a good field for recruiting the Navy.

The duty of all citizens, Tech men as well as others, is to combat certain false ideas of pacifism and teach the good results of military training in civil life even if the training is put to no use at all in warfare.

Herbert M. Wilcox, industrial engineer, New Haven, Conn.:

I like the idea of your postal card of the 11th regarding suggestions from '05 for the Preparedness number of the REVIEW.

The war game these days is as much an industrial and engineering problem as it is a military problem, and the following extract from the speech of Lloyd George before Parliament, on January 11, contains a warning to the industries of this country:

"You ask a great business man like my friend, Lord Pirrie, what is going on in those great factories throughout Great Britain and Ireland. Old machinery is scrapped ("Hear, hear!"); the newest, the best and the latest is set up; slipshod and wasteful methods are scrapped, and hampering customs discontinued. Millions are brought into the labor market to help to produce who were before purely consumers."

I believe Tech men can play a vital part in preparing this country industrially for both peaceful and military competition with any nation on earth through their influence in rooting out slipshod and wasteful methods in the industrial organizations with which they are associated.

I also feel that every Tech man should become active in any local civic associations which can be made powerful factors in cleaning up the wasteful governmental methods in municipalities. It is in individual localities where the grand cleanup of our extremely wasteful governmental organizations must start. The efficiency of the country as a whole depends on the efficiency of the units of which the country is made up: State, city, town, plant.

Personally, I was the New Haven representative of the A. S. M. E. in securing the inventory of industrial plants for the Naval Reserve Board. In this connection, Mr. Howard E. Coffin has done great work. Let us hope that our Democratic friends in Washington will not watchfully wait results he has secured into "innocuous desuetude."

C. R. Boggs, Arlington Heights, Mass.:

In response to your postal to the class concerning Preparedness, it has just occurred to me that since you are putting out the Ten-Year Book, it would not be inappropriate to include in it some kind of an index classifying the members in

different groups according to their knowledge, training or experience in relation to Preparedness.

The United States government will eventually have to have all citizens so, and means of promoting the idea and a possible first step might be for it to see the Board of Governors of the Engineering Club to try to get them to start some Preparedness dinners. As the acting Technology Club of Boston and the headquarters of engineering men in Boston, the Engineering Club should take the lead willingly in the promulgation of this idea.

I suppose that all these things have been gone over before but I just drop you this note to let you know I am interested and hope that something substantial will come of it.

You probably know that the Rubber Club of America and the Technology Club of New York have been sending to their members books on Preparedness. I believe this idea has been followed quite generally. Also the Technology Club of New York has had war luncheons and it does not seem inappropriate that the Engineering Club here should have some Preparedness luncheons or dinners at which instructive talks could be given.

The logical procedure would seem to be to have '05 have a Preparedness committee to look into ways of cataloging and we might make a small start.

Francis E. Drake, manager, gas department, Lynn Gas and Electric Company:

You want to know about Preparedness. Of course I believe in Preparedness, and that all you sinners like Bill Green, Ted Steel, yourself and a few more, should attend Billy Sunday's meetings, hit the trail, and become prepared, for goodness knows, you will all of you need it in the future. However, I am having such a good time at present I don't dare go and hear Billy for fear he might induce me to hit the trail, and then my good times would be at an end.

But seriously, there is one big movement that should start, not tomorrow, nor next month, nor next year, but today,—and that is the movement for National Preparedness; and Tech men can be a big factor in this movement.

We none of us, particularly myself, I know, appreciated what we were doing when we were at the Institute and cut seventeen out of every fifteen lectures and drills in Military Science. It was one of the biggest mistakes in our lives and I trust the boys today have waked up to that fact.

I have not many ideas along these lines except that we should have Preparedness in some form, and my personal view is that every male inhabitant of this great and glorious United States, from the age of fourteen to the age of twenty-two or twenty-five, should be compelled to have military training. In other words, I believe that from the grammar school through college, every boy in the United States should be compelled to drill and study military science regularly, and that every summer there should be concentration camps distributed throughout the country where these boys and young men would be compelled to attend anywhere from one to three months. After this period there is rather a question in my mind just how the project should be handled, but I do believe that every three or five years, until the age of forty has been attained, the men should be re-concentrated for the period of at least a month, to freshen up their military training.

Tech men certainly can furnish very valuable material for the government in the engineering side of this question, and I firmly believe it would be of very great benefit to the men themselves.

Henry J. Stevenson, Foxboro, Mass.:

You can include me with those who heartily favor universal military training. My four weeks at Plattsburg last August convinced me as nothing else could that this is the best plan so far suggested for an army reserve.

Please note my change of address. I am now with the Foxboro Company,—makers of recording gauges and thermometers, orifice meters for steam and gas flow, and the like.

C. R. Adams, Fresno, Calif.:

Replying to your suggestion that I send you my ideas for the Preparedness number of the Technology Review, I am pleased to express a few opinions which I have formed on that very important subject.

In the first place, it seems to me that every thinking man should have learned from the experience of Europe in the present war that military preparedness is absolutely essential for the protection of every nation—with the United States as no exception. The swiftness of the German advance across Belgium and France at the commencement of the present conflict left no time for the formation and equipment of armies. Had not France been prepared, Paris would now be in the hands of the enemy. While the United States is more fortunately situated by being separated by the sea from the more important military powers, there is security only so long as our fleet can remain victorious over the enemy. Once our fleet is defeated the time would be very short before enemy transports would land an immense army upon our shores. To meet such a contingency we must have an adequate army of proper size and with proper equipment.

This is a democratic nation, and as such its army should be democratic. How to accomplish this may be learned by a study of the experience of the democratic nations of Europe. (For Americans are learning that ours is not the only democracy in existence.) I think that there is only one conclusion to be reached from such a study and that conclusion is universal military training. Such a system not only is democratic, dividing the responsibility for national protection equally among all citizens, but it also provides the maximum military efficiency. It enables the nation to throw the full total of its resources into the conflict if necessary and to do so quickly.

Of course there are many and many debatable features, as for example the length of military service, the extent of military education, the proportion of first line troops and reserves, the amount of military equipment to keep in readiness, and other details of organization. But these can only be worked out after the acceptance of the fundamental principle of universal training and service.

At the present time there is agitation which may lead to the acceptance of the above principle and Congress may pass legislation to put it into practical effect. Toward this end I think that Technology men should use their influence both as individuals and as a body.

Technology men, however, are not limited to this means of aiding in National Preparedness. Under present laws there is opportunity for individual service, as for example in the reorganized National Guard. There is also the Engineer Officer's Reserve Corps to which many Technology men are eligible. Full information regarding this Corps may be had by addressing the Chief of Engineers, War Department, Washington. There is presented an opportunity for engineers to qualify for commissions in the engineer corps for all grades up to and including that of major. Examinations are all oral and the attempt is made to arrange them to suit the convenience of applicants. Without attempting to go into any detail in this matter I recommend it for further investigation by all engineers who have real interest in Preparedness. It appealed to me as a very practical means of doing definite work and I lost no time in making application for examination, as no doubt did many other Tech men.

The point I wish to make is that there are practical opportunities for Technology men to aid in the work of National Preparedness under present laws and conditions, without losing sight of the chief desideratum of universal training and service. Also that any study and training which are received under present conditions will render the men just that much more valuable when the ideal system has been perfected.

I will follow with much interest the opinions expressed by other Tech men.

H. Louis Jackson, state chemist, Boise, Idaho:

I can relate my "Preparedness" views very shortly. All boys physically fit should in their schools, at 12 years of age, come under a mild form of military dis-

cipline, drill and setting-up exercise for at least half an hour a day, preferably under junior military officers, young men. This to progress through the years until on entering high school they should have a very substantial military drill and target practice under competent officers, with the boys themselves coming by this time into subordinate commands. At graduation they should go into the field for the summer months, and the summer months of the next two years. College men to take special work looking to their fitness as officers, also opportunities provided for those who show up well in command to go to government schools if unable to go to college themselves.—An entirely democratic army with officers entirely on their merit. A strong navy that can hold any enemy from landing in force for several months, for all time would be better. England's navy has saved her from Belgium's fate and has saved material goods in value many times its whole cost. Many other things should go with the above to coördinate the whole, such as every war asset being listed and kept up-to-date and informed just what part to take on the outbreak of a war. It's a big program and should have been started about August 15, 1914. We have wasted valuable time. Finally, work against war, and be strong enough and quick enough that no one will want to fight with us. Work for a league to maintain peace by force, for gradual disarmament of all countries and the substitution of sense for force in the settlement of difficulties.

A classmate in government employ, who for that reason does not wish his name to appear, suggests the following:

For a generation the few field marshalls of the British Army preached a doctrine that no one in Britain paid any attention to. England is now paying millions of pounds trying to put that doctrine into practice. The other day Generals Wood and Scott told Congress what we need in this country.—If you want to build a plant you get an engineer,—if you wish legal advice you go to a lawyer,—if you get sick you go to a doctor, but if we desire in this country to reorganize our army we hire a congressman! It would not be difficult to get copies of the reports of these two generals. General Wood and General Scott are at the head of our army. Both have grown gray in the service, and stand for the noblest ideals of the military in America.

These letters indicate that there is a strong sentiment for universal military training which has not yet found expression. Our class was represented at Plattsburg by Abbott and Bennett in July, Clark and Stevenson in August, and Marcy in September. From his own experience the secretary would say he never worked so hard in his life, but would not have missed it for a great deal. He gained six pounds in weight, some idea of military organization, and a new light on constructive patriotism.

Many Tech men do not go to Plattsburg because they know that in the event of trouble they would be of much more use elsewhere than the trenches. They would probably be of far greater use, however, in their specialized administrative or engineering capacities at the time of mobilization, if they had had even the brief glimpse of the inter-relation of all factors for military efficiency given at Plattsburg. While there are probably more restful ways of spending a vacation, few could represent such an absolute change, so much physical advantage or so interesting an experience.

At the time of this writing the publication date of our Ten-Year Book seems to be in sight. It remains to be seen whether it will beat this issue of the REVIEW into the mails.

1906.

C. F. W. WETTERER, *Sec.*, 147 Milk Street, Boston, Mass.JAMES W. KIDDER, *Asst. Sec.*, 50 Oliver Street, Boston, Mass.

Coes writes as follows in regard to the Technology movement toward Preparedness:—

From a munitions point of view, the one thing that we, as engineers, could do, and it is no easy task, is to create and mold, by every legitimate means at our command, public opinion so that our governmental officials will not be caught in the same situation that Great Britain was at the outbreak of this war. I mean by that, that my own observation and experience, both here and in Canada, forced me to the conclusion that munitions, in particular, were not designed for large scale production.

It is one thing to turn out a few hundred shells or fuses by hand-made tool-room methods in no stipulated time, and quite another to turn out thousands of these self-same articles in one day in a given plant, and I think this vast war teaches us that modern warfare is organized on a tremendous scale and that large scale production is the basis of it. Therefore, every means should be utilized to permit the manufacturing of a large scale and, at the same time within the limits of accuracy that are essential to make the articles function from the ordinance engineer's point of view.

The idea seems to be prevalent now that these two viewpoints are antagonistic and not reconcilable, which to my mind is far from the real truth, in that tradition and abstruse theory has determined the design, irrespective of the possibilities and conditions necessary for large scale production. In other words, the time to redesign these articles is before we go into a big war and not be forced to do what some of the nations at present have had to come to, namely, to redesign all their munitions while engaged in a large conflict.

More than anything else, however, we need to develop public opinion, and educate the public so that the man in the streets may realize that an adequate, consistent and continuous policy with respect to our War Department, our Navy Department, the development of our natural resources, our tariff legislation and our business legislation, is the one great step towards basic Preparedness.

While I am in complete sympathy with the movement you are concerned in, I am by experience sceptical as to the results that are accomplished by means of a meeting that simply stirs up the situation for the present, but leaves no lasting consequence or results.

If this will lead to some means by which our alma mater may back a movement which is laid out to accomplish definite results in a manner that any engineer goes about solving any problem, then I am with you heart and soul.

Figures recently obtained as to registration at the June, 1916, Reunion, put 1906 well up in the list as to attendance. The classes beginning with 1910 were all high as they are not yet scattered over the country to the same extent as the earlier classes. 1906 stood a close second for all classes up through 1909, the registration being 131. The highest was 1905, with 135. The total registration for forty-nine classes was 3,911.

John A. Root, Course III, has joined the benedicts. The *Anaconda Standard* of August 5, 1916, contained the following item:

Bachelordom mourned the loss of another member of that happy fraternity last night in fitting style when the news reached Anaconda that J. A. Root, assistant chief chemist at the smelter, and Miss Mary Brennan, also of Anaconda, are to be married in Los Angeles today.

Dinner at the Bachelor Club, Third and Oak streets, was consumed last night

with one vacant chair at the table appropriately draped in black, in token of the regret Root's brother clubmen feel at losing him.

Miss Brennan left Anaconda for the coast city Thursday. Since her arrival here a little more than a year ago she has practiced her profession, that of nursing. Both she and Mr. Root are well known here and have the best wishes of Anacondans in general and the Bachelor Club in particular for their future happiness.

Miss Brennan graduated from the Anaconda High School in 1908, leaving shortly afterward to take up the study of nursing.

And another benedict is Sherley P. Newton, Course V, the Natick (Mass.) *Citizen* of October 26, 1916, having the following item:

The marriage of Miss Pearl Nathalie Perry, second daughter of Mr. and Mrs. Francis C. Perry of 51 West Central street, to Mr. Sherley P. Newton of Montreal was quietly solemnized Saturday evening, October 14, at the home of the bride's parents. Miss Perry is a social favorite here and was head of the stenographic department in the Quincy High School, where her reputation for fine work equalled that she had already made in the same department of the Natick High School.

Mr. Newton is a graduate of 1906 class of the Massachusetts Institute of Technology and at present is chief chemist of the Sherwin-Williams Color Company of Montreal.

Mr. and Mrs. Newton, after a wedding trip through the mountains, will go to their new home in Notre Dame de Grace, Montreal.

And still another 1906 benedict is George R. Guernsey, Course I, the Natick (Mass.) *Citizen* of October 26, 1916, again being the source of our information:

A very pretty wedding occurred on Monday evening at the home of Mr. and Mrs. George E. Seagrave, 51 Central street, Wellesley, when their daughter Elsie was married to Mr. George R. Guernsey of Wellesley.

The bride is a graduate of Framingham Normal School and has taught several years in the West. Mr. Guernsey, a graduate of the Massachusetts Institute of Technology, is in the banking business.

After their wedding trip, Mr. and Mrs. Guernsey will reside on Atwood street, Wellesley.

Is that all? Well, we should say not! Just listen to this announcement about J. H. Polhemus, Course III.

Mr. and Mrs. Lewis Garwood Rowand announce the marriage of their daughter, Linda May, to Mr. James Higbie Polhemus on Saturday, the eleventh of November, 1916, Sea Gate, New York.

At home after the first of December, 91 North Mountain avenue, Montclair, New Jersey.

And just to show you that we have at least one candidate for entry into the said venerable order of benedicts, we quote you this one from the Boston *Transcript* of October 28, 1916, concerning P. J. Clapp, Course II.

Mr. and Mrs. Frank W. Mendum of 22 Woodville street, Roxbury, announce the engagement of their daughter, Emeline Otis, to Prescott Jones Clapp of Kingston, N. Y., formerly of Dorchester. Miss Mendum, following her student days at Mount Holyoke, took a course at the Normal Art School, Boston, and since her graduation from there she has been connected with the fine arts department at the Boston Public Library. Mr. Clapp is a graduate of the Massachusetts Institute of Technology and is engaged in his chosen profession of civil engineering.

Quite a record we should say, and of course, there are a lot more who have about made up their minds to take the degree but they are just a little bashful about dispensing the information.

A recent letter from Henry R. Patterson, Course II, announces the arrival of another son, and a change in position. Congratulations on both, but of course mainly on the son. Patterson's letter follows:

You may be interested to learn of the arrival of Richard Gee Patterson on December 21, 1916. He is our second son, the first being Henry R., Jr. (July 11, 1914.) On July 1, 1916, I was transferred from the Trenton Works of The American Steel & Wire Co. as superintendent, where I had been in various capacities ever since May, 1907, the last four and a half years as superintendent, to the Scott Street Works, Joliet, Ill., of the same company, as superintendent. I am enjoying my new position here very much and like the town.

I was sorry not to get down to the dedication exercises last June, but you can easily see that that happened just about the time I was moving. Was glad to see that '06 held its end up so well. The new Tech buildings must be fine. We surely do get some good detailed accounts of doings down there in the REVIEW.

Other "Techlets" reported for '06 are as follows:—by the way, why not call them "Sixlets"?

Paul Foote Norton, in January, to Mr. and Mrs. John (Jack) F. Norton, Course V. We have no information at hand regarding the weight of young Norton, and assume that is probably due to the fact that a professor in chemistry would not be satisfied with an approximate weight expressed in pounds and ounces and Jack was probably so busy he did not have time to obtain the exact weight upon his chemistry balances.—Donald Kent Tucker, son of Mr. and Mrs. C. E. Tucker, Course V, arrived on November 3, 1916, weight $9\frac{1}{4}$ pounds. Tucker's biography in the Ten-Year Book should be corrected to read "Married 1909, 1 girl, 1 boy."—Mr. and Mrs. H. A. Ginsberg, Course VI, announce the birth of a son, Stanley Marcy, November 24, weight $9\frac{1}{4}$ pounds. Ginsberg should now be classified with those having one child in the class statistics.

The sympathy of the class will go out to H. W. Dean, Course VI, in his double bereavement. Dean's father, who lived in Cambridge, Mass., died Sunday morning, January 20, and his mother died Monday morning. The double funeral was held Tuesday, January 23, at Cambridge.

Class dinner at Louis' on December 19 was attended by fifteen men. They were Ball, Clarke, Farwell, Jackson, Johnson, Kidder, Lawrence, Lambert, Mowry, Nash, Norton, Patch, Rowe, Trowbridge and Wetterer. Ned Rowe acted as toastmaster; no formal speeches were presented, but numerous subjects were discussed from the "War in Europe" to the "High Cost of Living." From the dining-room the crowd adjourned to the Casino Alleys where bowling matches were held. No world records were established, although some bowling talent was unearthed. Lawrence turned in scores of 85, 100 and 105 for his three strings and was the high

man for the evening. Johnson and Trowbridge rolled single strings of 106 and 102, respectively, placing them in the Honorable Mention class. Other scores ranged from 52 to 91. The final event consisted of a match between teams of Rowe, Farwell, Lawrence and Kidder on one side and Johnson, Trowbridge, Patch and Norton on the other. The latter team won out by a score of 348 to 331.

Some time ago when the secretary happened to be in the office of Dean Burton he noticed a 1906 class picture, which the dean was treasuring as any '06 man should. Observing the picture was unframed, it was borrowed from the dean, and after being framed returned with an appropriate letter stating our appreciation of the honor of counting Dean Burton as one of our members. The dean's acknowledgment will be of interest to the class:

DEAR MR. WETTERER:—

I am much pleased to receive the class picture with its beautiful frame, and it will be hung in my office in such a way that no one can get by it without noticing it. I shall always regard it as a pleasure and honor that you received me into the membership of your class.

Very truly yours,
(Sgd.) ALFRED E. BURTON.

W. A. Hotchkiss, Course VI, recently telephoned the secretary that he was now in Mansfield, Mass., with the New England Drawn Steel Company, which is erecting a new plant at that point.

E. B. (Ned) Rowe, Course VII, has returned to Boston, the following letter having been received from him:

Back in Beantown and permanently this time I expect. Finished my work with Stone & Webster, in charge of the Tech lighting, and went back to Cleveland in early August. For the next two months was busy on special work for the Cleveland School Board in connection with electrical and lighting installations.

In September I finally accepted a position in the engineering department of the American Agricultural Chemical Company with headquarters in Boston, a position I had first considered last February but turned down then in order to stay with the Tech lighting till the finish. I kept my family in Cleveland till November on account of the infantile paralysis epidemic and then put my house on the market and pulled stakes for Wellesley Hills, where we are now comfortably situated.

The engineering department of the American Agricultural Chemical Company I found was mostly Tech, including Mahar, Trowbridge, Johnson and Harry Brown of 1906, although Trowbridge has since left the company and Brown is now assistant superintendent, I believe, of the Michigan Carbon Works at Detroit. My work is a little of everything—sort of office boy to the chief and assistant chief engineers—but we've been doing so much new work the last several months that a good part of my time has been spent on contracts for material and equipment, getting quotations, placing orders, and then getting the goods on the job. It'll be general engineering and executive work with outside inspection now and then.

1907.

BRYANT NICHOLS, *Sec.*, 10 Grand View Road, Chelsea, Mass.
HAROLD S. WONSON, *Asst. Sec.*, Waban, Mass.

The plan of publishing a class book containing an account of the doings of members of the class since graduation has been abandoned on account of lack of support on the part of the class. Only

sixty-six men sent subscriptions for the book to the secretary, and as the income which would come from this small number would be absolutely inadequate to pay for the cost of preparing the book, the officers decided to defer the publication until some later date. The secretary will give through the REVIEW the important facts about the men.

John G. Barry, who affiliates with our class, and who has roamed about the country a good deal since undergraduate days, can now be reached by addressing him at M. I. T., Cambridge, Mass. He is instructor in geology.—The correct address for H. N. Burhans is 8 The Leonard, Syracuse, N. Y. Harry is secretary of the firm, Burhans & Black, Inc., wholesale and retail hardware dealers.—Kenneth Chipman has returned from his long trip into the Far North, where he was geologist with the Stefansson expedition. The fellows who have seen him say he is looking well and has grown fat. His address is Geological Survey, Ottawa, Canada.—James A. Correll, who for years failed to let us know of his doings, is adjunct professor of electrical engineering at University of Texas, and his home address is 2316 Neches street, Austin, Texas. Correll is doing his part in the family way, and has three children—all girls.—S. G. Emilio, whose address has also long been missing, has been located at Utah Apex Mining Company, Bingham Canyon, Utah.—The secretary, Bryant Nichols, welcomed into his family on December 9, 1916, the third child, a son, Edward Bryant Nichols by name.—The following clipping is from a New York paper:

Raymond W. Parlin a Brooklyn man, living at 265 Ocean avenue, is the new deputy commissioner of street cleaning who has been appointed by Commissioner J. T. Fetherston. The deputy commissioner receives a salary of \$5,000 per year. Mr. Parlin specialized as a student in the Massachusetts Institute of Technology in sanitary engineering, and has had exceptionally broad experience in municipal work, including street cleaning. He has been connected with the Massachusetts Board of Health as assistant engineer, and has been engaged in street cleaning and refuse disposal work in various cities, including Norfolk, Va., Greenwich, Conn., Detroit, Mich., and Rochester and Buffalo, N. Y. For the past two years he has been connected with the Bureau of Municipal Research as expert in municipal sanitation. . . . He is a member of the American Society of Civil Engineers, the American Society of Municipal Improvements, the American Water Works Association, and the Boston Society of Civil Engineers.

Winslow D. Robinson has gone to Pittsburgh, Pa., still remaining with F. W. Dodge Company, publishers of the "Dodge Reports." His address is 194 N. Sprague avenue, Bellevue, Pa. His second child, a daughter, Eunice, was born October 21, 1916.—Another girl joined the ranks of '07, Junior, when Mary Smith was born to Mr. and Mrs. Theodore L. Smith, on December 25, 1916.—And still another future Tech man appeared on November 19, 1916, when Donald Jewett Swett, came into Middlebury, Vt., as the son of Phelps Swett.—J. D. Whittemore is now with Claremont Power Company, Claremont, N. H.

Correct address for A. B. Arnold is 538 Lawrence Ave., West-

field, N. J.—Charles E. Baker, 172 Condor St., East Boston, Mass. A. F. Bancroft, 25 Magnolia Ave., Haverhill, Mass.—E. W. Bonta, 622 James St., Syracuse, N. Y.—A. A. Brooks, 94 Chester Ave., Chelsea, Mass.—John A. Davis, United States Bureau of Mines, Washington, D. C.—John T. Fallon, Lake Saranac, N. Y.—Harry A. Frame, Box 741, Sapulpa, Okla.—J. W. G. Hanford writes from 800 Burwell St., Bremerton, Wash., that after having a good deal of sickness in his family and after having moved about from one place to another for several years, he has received an appointment on marine engine design, and is located at the Puget Sound Navy Yard. He says that ship building in general is booming on the Pacific coast, and that they are very busy at the Navy Yard.—H. B. Hosmer is at 74½ Pinckney St., Boston, Mass.—W. F. Kimball, 53 Everett St., Arlington, Mass.—Clarence R. Lamont was married on December 31, 1916, to Miss Sue Rice of Quincy, Mass.—H. C. McRae, 207 Singer Ave., Arlington, Md.—N. A. Middleton, 60 Congress St., Boston, Mass.—A son, John S. Nicholl, Jr., was born to J. S. Nicholl, on November 10, 1916.—O. L. Peabody, 37 Ress Ave., Norwood, Mass.—W. P. Rayner, 1800 Kenyon St., N. W., Washington, D. C.—John Tetlow has become connected in business with the Hyatt Roller Bearing Company at Harrison, N. J. His address is 205 North 9th St., Newark, N. J.

1908.

RUDOLPH B. WEILER, *Sec.*, care The Sharples Separator Co., West Chester, Pa.

CHARLES W. WHITMORE, *Asst. Sec.*, care Kastrup & Cia, Rua Liberro, Badaro No. 66, Sao Paulo, Brazil.

LESEUR T. COLLINS, *Acting Asst. Sec.*, care Marshall & Co., 70 State Street, Boston, Mass.

I. *On the Part of the Secretaries.*

"Whit" sprung a surprise on us all by sailing for Brazil on August 26 for a several months' trip and Tim Collins has agreed to do the honors in his absence. Tim, therefore, wishes to head the column with a piece of news by announcing the arrival of a daughter Majorie on August 11.

As our fellow alumnus Roger Babson says, "Action and reaction are equal," therefore, after the ending of the Reunion in a blaze of glory there were only five members present at the September bimonthly meeting, so the bowling match had to be called off.

Mr. and Mrs. George Schobinger announce the arrival of a daughter, Elizabeth Hall, on November 18.

The second bimonthly dinner of the '08 tribe was held at the Boston City Club Tuesday evening the 9th with eleven of the

members present. They were Towle, Cook, Mayo, Toppan, Beede, Ferrandi, Heath, Cary, Wells, Coffin and Collins.

After the dinner we held a bowling match between the married men's quarter, composed of Cary, Coffin, Wells and Collins, and the single men's quarter, composed of Cook, Toppan, Ferrandi and Mayo. The married men won the first string by sixty points and the second string by seventy-five points. They then decided to concede the single men fifty points handicap on another string and the single men just nosed them out. Eb Wells held the high single candle-pin string of 115.

R. J. Batchelder is now in Rome, where he will spend two years in the further study of architecture.—J. W. Maxwell, who has been for a year or two temporarily connected with the American Smelting & Refining Co. in their "Smoke department" investigating the effect of smelter smoke and fume upon agricultural interests, has recently entered the permanent organization of this company and is now in charge of that work at the Tacoma Smelter at Tacoma, Wash.

Letter from "Whit" follows:

Just a line to let you know we had a perfect trip down and that I am up to my neck in work. Found so much stuff waiting for me here that I had no time for sight-seeing or society. Had to come right up here and will spend most of my time here.

Rio is the place for society and through it considerable business can be gotten, while in Sao Paulo it's pure business.

Mrs. Whitmore has just come up here from Rio where I left her to pave the way socially, so that on our next trip down there I expect a pretty good time. She was entertained by our ambassador and by one of the Brazilian senators. The senator's daughter and her husband, who is a congressman, have become quite friendly with us. He is young and athletic and a mighty nice chap. Has a wonderful summer home at Pretropolis with golf, tennis, a dozen polo ponies, etc. Expect to spend two or three weeks there as soon as I get things straightened out and these people certainly know how to entertain.

From a business standpoint they are a funny combination and it takes considerable experience here to get on to it. Of course, there are all classes and most are excellent business men. I have found that here in Sao Paulo, for instance, they will keep a bargain once they have given their word, but the trouble is to get that word. They will beat all around trying to make you think they have given it when they haven't. They will not be rushed and it takes several days to get one little piece of business. An appointment to them at a certain time on one day seems to mean sometime the next day, at least, that is my experience so far.

The country here is very beautiful, especially around Rio, which I believe to be the most beautiful city in the world, but when it comes to comforts they have lots to learn. There is not what we would call a real hotel here.

The regular bi-monthly dinner was held at the City Club January 9, fifteen members being present as follows:—Hatch, Esten, Wells, Ford, Toppan, Cole, Joy, Cary, Heath, Gerrish, Towle, Coffin, Luther, Cook and L. T. Collins. The single men's quartet made up of Ford, Toppan, Cole and Joy beat the married men's quartet made up of Hatch, Esten, Wells and Collins two strings. This was a most unusual performance for the single men. The best player on the single men's team, however, happened to be a

married man named Joy, who took all the joy out of living for the married men.

II. *Matrimonial.*

C. F. Joy, Jr., was married on October 21 to Miss Grace Grant at Chelsea, Mass.—R. C. Collins was married at Whitman, Mass., to Miss Margaret Orr Edson on October 28. At home after December 4 at 166 25th street, Elmhurst, L. I., N. Y. G. M. Belcher was best man.

III. *New Addresses.*

Alfred B. Babcock, 1301 Carroll St., Brooklyn, N. Y.—Wilfred E. Booth, 335 Edgecombe Ave., New York, N. Y.—Harry L. Burgess, Bell Tel. Co. of Pennsylvania, 1230 Arch St., Philadelphia.—Myron M. Davis, 23 Lebanon St., Winchester, Mass.—Lynn S. Goodman, 248 Boylston St., Room 601, Boston, Mass.—Edward A. Plummer, care of Am. Tel. & Tel. Co., 195 Broadway, New York City.—Henry V. Spurr, 285 Brown Hall Hill, Montreal, Que., Canada.—Harry P. Sweeny, Fort Montgomery, N. Y.—Edmund L. Warren, Stanley Rule & Level Co., New Britain, Conn.—F. A. Cole, 55 Brookside Ave., Newtonville, Mass.—Dr. Max S. Rohde, Seventh Ave. and 55th St., New York City.—Harry H. Bentley, 1614 Corn Exchange Bldg., Chicago, Ill.—Clifford H. Boylston, Alabama Power Company, Parrish, Ala.—Chalmers S. Clapp, 21 Smith Bldg., Framingham, Mass.—Henry H. Damon, Bureau of Yards and Docks, Washington, D. C.—N. Leroy Hammond, 82 Walpole St., Norwood, Mass.—Arthur T. Hinckley, 2 C St., Niagara Falls, N. Y.—W. Armour Johnston, 349 E. Market St., Akron, O.—Emerson F. Lyford, 57 School St., Milford, Mass.—Jesse Worth Maxwell, care Tacoma Smelting Company, Tacoma, Wash.—Eleazer Myers, 12101 Normal Ave., Chicago, Ill.—Harry F. Richardson, 265 Ocean Ave., Brooklyn, N. Y.—Willard F. Rockwell, 1786 E. 89th St., Cleveland, O.—George D. Whittle, Office of Public Roads, Washington, D. C.—Charles F. Joy, Jr., 187 Reedsdale Road, Milton, Mass.—A. W. Heath, vice-president and assistant treasurer, E. B. Lime Company, Fidelity Bldg., Boston, Mass.

1909.

CHARLES R. MAIN, *Sec.*, 201 Devonshire Street, Boston.

GEORGE A. HAYNES, *Asst. Sec.*, 530 Atlantic Avenue, Boston.

The alumni dinner this year was one of the best we have had. The general subject under discussion, "Technology's Duty to the National Government," was particularly interesting at this critical period, and all of the addresses were well presented. The class had rather a small representation; Dawes VI, Main II, Perry VI, Spencer II and Wallis II. We ought to do better than

that next year. Each class had a round table of its own which added greatly to the congeniality of the occasion.

The secretary was in hopes of hearing some discussion from the class on the above subject, but as yet nothing has come to him. It would seem as though some of us were in a position to make some pretty pertinent remarks along this line, especially those who have been engaged in scientific research. Although this issue of the *REVIEW* is to be devoted to this topic, the secretary hopes that he may yet hear from some of the members of the class along this line of thought.

There has recently appeared a reprint of a paper on "Relative Values in Public Health Work" read before the Massachusetts Association of Boards of Health, at the July meeting by Franz Schneider, Jr., VII, sanitarian with the Russell Sage Foundation. The author starts out with the statement that a fourth or a third of the deaths in the United States occur from preventable causes. He then takes up the field of prevention, and follows with four criteria which must be considered in making up the relative value of a disease, namely, amount of damage done, preventability, cost of prevention, and communicability, or tendency to become epidemic. The product of these four factors gives the relative value. After making the above general statement he goes on to apply these criteria in deriving a set of values, which he says may not have a high degree of accuracy, but believes "that the values derived permit a considerable margin for difference of opinion, without altering the general conclusions which the figures suggest."

"Jim" Finnie, VI, is now located in Pawtucket, R. I., with the Phillips Insulated Wire Company, having previously been with the General Electric Company. He writes:

At last I am to hang my pajamas on the same hook two nights in succession after having experimented with every known variety of hook for seven years.

We are happy to announce the marriage of three of the class. The following taken from the *Boston Globe* of October 15, 1916, came too late to be reported in the last issue of the *REVIEW*:

Miss Mildred G. Eccles, daughter of Mrs. David Eccles of 96 Hovey street, Watertown, was married yesterday afternoon to George Henry Reppert of New York by Rev. Raymond Calkins at the First Congregational Church, Cambridge.

The bridesmaids were Miss Hazel Sherman of Cambridge, Miss Dorothy Adams of Cambridge, Miss Marjorie Scott of Springfield and Mrs. William Underwood of Springfield. Charles deW. DeVinne of New York City was best man. Mr. Reppert is a graduate of Princeton, '06, and the Massachusetts Institute of Technology, '09. The bride is a graduate of Miss Wheelock's school. They will live in New York City.

H. C. Colson, Jr., IX, was married to Miss Margaret Foster of Abington, Mass., on September 28, 1916. They will reside in Baltimore, Md.

The T. C. Desmond & Co., Inc., engineers and contractors, 110

West 34th street, New York City, announce the incorporation of their business for the purpose of undertaking engineering and construction contracts of any description.—At the seventh annual meeting and luncheon of the Technology Women's Association, held in the new Tech buildings, Miss Elizabeth Babcock, V, was elected corresponding secretary.—Carl Gram, X, has left Walter Baker & Company, and is now associated with the Massachusetts Chocolate Refiners, Inc., Mansfield, Mass., which has recently taken over the business of the Walter M. Lowney Company.—George Haynes is now with the Heintzemann Press, 530 Atlantic avenue, Boston, Mass.

Address Changes.

Harold F. Ballard, 162 Springdale Ave., East Orange, N. J.—Seymour F. Barnett, 1515 South Figueroa St., Los Angeles, Cal.—John N. Boyce, 721 Locust St., Anaconda, Mont.—Felix A. Burton, 13 Federal St., Brunswick, Me.—John A. Christie, care of Swinehard & Co., Akron, Ohio.—Milton S. Clark, 605 N. Main St., Jamestown, N. Y.—Nathan L. Coleman, Hotel Baker, Polk & Pine Sts., San Francisco, Cal.—Mitchell J. Daley, 69 Bennett St., Brighton, Mass.—Myron M. Davis, 22 Lebanon St., Winchester, Mass.—Warren L. DuBois, Y. M. C. A. Bldg., 107 Halsey St., Newark, N. J.—Lloyd C. Eddy, Jr., Barrington, R. I.—Wilhelm G. Fick, care of Greenfield Worsted Mills, Garfield, N. J.—James I. Finnie, care of Kalon Club, Pawtucket, R. I.—V. Carl Grubnau, care of Hotel Alvarado, Albuquerque, N. M.—Calvin N. Harrub, 33 Pendleton St., New Haven, Conn.—Derick S. H. Hartshorn, No. Berwick, Me.—Delose G. Haynes, 149 Broadway, New York, N. Y.—George A. Haynes, 530 Atlantic Ave., Boston, Mass.—Leon J. D. Healy, 644 Mabbett Ave., Milwaukee, Wis.—Louis Jacoby, Westinghouse Electric & Mfg. Co., Maison-Blanche Bldg., New Orleans, La.—Allen Jones, Jr., care of Lexington Mfg. Co., Lexington, S. C.—Austin D. Keables, 450 South Main St., Woonsocket, R. I.—Robert M. Keeney, 603 Symes Bldg., Denver, Colo.—William J. Kelly, 95 Brooklyn Ave., Brooklyn, N. Y.—Lester H. King, 708 East Court St., Flint, Mich.—Paul H. Lazenby, 16 Garden St., Cambridge, Mass.—Francis M. Loud, 903 Lake St., Newark, N. J.—Frank S. Lovewell, 647 Main St., Hartford, Conn.—Kenneth S. May, 156 Woburn St., West Medford, Mass.—Thomas G. Machen, 1279 John St., Baltimore, Md.—Wilbur A. Meanor, 917 Robson-Prichard Bldg., Huntington, W. V.—Thurston C. Merriman, 249 Ellsworth Ave., New Haven, Conn.—George A. Morrison, P. O. Box 1425, Salisbury, Ontario, Canada.—Lewis D. Nisbet, 12 Rhode Island Ave., Providence, R. I.—Clark S. Robinson, 393 North Main St., Reading, Mass.—Walter J. Rountree, Quitman, Ga.—Francis H. Soderstrom, Box 227, Miami, Ariz.—Harry E. Whitaker, Westinghouse, Church & Kerr, 165 Broadway, New York, N. Y.—Edward T. Williams,

2925 North Park Blvd., Cleveland, Ohio.—George S. Witmer, care of Chile Exploration Company, Chuquicamata, Chile.

1910.

DUDLEY CLAPP, *Sec.*, Box 1275, Boston, Mass.
Federal Power & Light Co., 35 Congress Street, Boston, Mass.

So many kind expressions of good will, encouragement and confidence have come to your secretary that he feels considerable doubt as to his ability to live up to what is expected of him. However, it is fine to know that all the boys are so interested in the class and to feel that the 1910 spirit is something real and powerful. Fred Dewey writes on \$10,000,000 stationery thanking Herb Cleverdon for the last *Mitten*. Carroll Benton takes the opportunity to write a brief note on the ballot as do Hal Lockett and a number of others.

Some of the boys came across with news which is always interesting to the rest of us. Atwood Collins Page writes:

The class dinner was a great success and I had a "bully" time and agree with you that the plan of letting the fellows talk and compare notes was better than having speakers.

There is not much news to give you as all the Tech men in Hartford are very busy and have not gotten together as yet this Fall.

I am doing cost and efficiency work at the Whitney Manufacturing Company. Mr. Whitney, the president, is a good Tech man as you probably know.

The following comes from Walter Harrington from the wilds of Utica:

I was very glad to get the November issue of the *Mitten*; it certainly did justice to the good time we all had at the Reunion. Thank you very much for sending it.

If you are ever up in the vicinity of Utica, N. Y., look me up. I am now assistant engineer to Mr. George A. Orrok of the New York Edison Company, an 1879 Tech man. We are planning a hydroelectric plant for the Utica Gas & Electric Co., and will probably begin construction in the spring, at Trenton Falls, about twenty miles north of Utica.

In the fair city of Washington the art of note-writing is well advanced, and we are indebted to K. P. Armstrong of that village for a good, long, newsy letter, from which the following is abstracted:

It was quite a pleasant surprise to receive the latest copy of the *Mitten*. To be sure I had gleaned from hearsay that 1910 pulled off a pretty good stunt at Nantasket at the Reunion, and there were one or two pictures in the last issue of the *REVIEW* of that event, but I looked in vain for any class news. To the 1910 man who is away from Boston, and especially to the unfortunate individual who must perforce wander about over the face of the earth without stopping long enough in one place to even have a mailing address, occasional items of news about one's classmates are very welcome. I think that it would be a good idea to round up as many of the class as possible and publish their names and addresses in the next issue of the *REVIEW*, so that we may all know where the other fellow is now, and what he is doing. To start the ball rolling may I modestly kick in with the announcement that I have not only got married, which is probably no news to most of our classmates, but have also performed the subsequent and more difficult operation

(pro civil engineer) of "settling down," and that my domicile is now Washington, D. C., where I have been since April 1 last, and where I expect to remain until I get the can tied to me or until some one lures me away with the offer of a much better job than I have now? Yes, I have degenerated from an engineer to a government clerk, and am disgracefully contented and comfortable here. I have added some twenty-five pounds to my weight, so that I look less like a bean pole and more like a human being, and own a nice new bungalow in the near suburbs of Washington. The section where I live is inside the city limits, although denominated as "suburban" by this unenlightened municipality because the fact that the houses here are built with space all around them such as we Bostonians are accustomed to, instead of in solid rows of brick as is the custom in other parts of this and other cities south of New York. I have been with the government two years and a half now on the Railroad Valuation work of the Interstate Commerce Commission, and until last April was in the field, busily scurrying about from place to place all over New England, New Jersey, Delaware and Maryland. You may remember that I paused long enough in Boston last March to attend one of the class dinners, as I have occasionally found time to do in the past few years, and pledged myself to be present at the Reunion. I fully intended to keep that pledge, but the course of events willed otherwise. At the time the Reunion took place I had just bought my house here, my furniture was on the way from Boston and due to arrive any minute (although as a matter of fact it was held up three months on account of some bonehead play on the part of the New Haven Railroad), and my mother had just moved out of our old home in Somerville, where I would otherwise have stayed had I returned to the Reunion. Add to this the fact that I was broke, and had no pass on the railroads, and you will see that I had very cogent reasons for my absence, much as I regret it.

I haven't a bit of news about any one but myself, in fact haven't seen a 1910 man since last March, so I guess I will have to end this epistle here, and hope it isn't too long and weighty to be sent in the stamped envelope you so kindly furnished.

If any 1910 man comes to Washington I want him to know that the latchstring is out at 1512 Kearney street, North East, and hope he will pay us a call.

Our friend Larry Hemmenway is alive as usual and responds from Gotham with the following:

I enclose herewith my vote for secretary of the class of 1910 and you will note have voted the straight party ticket, not splitting in any way. I trust that Clapp may carry both electoral and popular vote, and that we may receive the correct returns promptly. Kindly eliminate all "watchful waiting."

I was pleased to receive the latest issue of the *Mitten*, and suggest that the good work be kept up and that it be made a regular organ for the class. Good live class news in the *REVIEW* is always interesting, but I feel that a special class paper coming every once and awhile does a lot to keep up interest in a class.

I was in Boston over Thanksgiving and spent Friday afternoon looking over the new buildings. They are certainly wonderful and leave nothing to be desired. I felt like returning and going through all over again. I went to Boston by boat Wednesday night and ran into Benton and Abbot Allen. They were on their way home for the holiday.

I suppose you know that Jack Tuttle has taken the big step and Mr. and Mrs. Tuttle are at home in Akron, Ohio. I sort of expected this after noting the especially happy smile on Jack during the Reunion.

Everything goes well with me. I am still with the General Vehicle Company, Long Island City, and live in Elmhurst, Long Island. The address is 230 Twenty-fifth street, Elmhurst, Long Island, and hope that if any of the fellows are around New York, they will be sure to look me up.

Kindly extend my appreciation and thanks to Charlie Green for the good work he has done for the class, and congratulate Dud Clapp immediately upon his election.

If at any time there is anything I can do to help things along, either in a general way or in connection with New York, do not hesitate to let me know and I will do everything I can.

Our class was well represented at the border, right on the firing line, where it ought to be, but we will let the soldier boys tell their own story. Harold Locket's letter follows:

Rather surprised to receive the *Mitten* and find that I hadn't missed anything; you see the last four months I spent in Texas playing soldier and therefore lost track of most everything. The enclosed picture is not offered so much on account of its artistic points as proof that I was really in uniform. Within two days after I returned from our history-making Reunion we got orders to go South and since then I've seen every bug, insect, and reptile, that grows in Texas. Scorpions and rattlesnakes are old friends of mine now; it is queer how indifferent one can become with, or rather after, four months' close acquaintance with those birds. The call was rather a shock and broke up our business plans in great shape but really I had a great time and enjoyed the experience very much. At present I am looking for a job or something to keep me busy or probably wouldn't have inflicted this letter on you. The fellows who put over 1910's part of the Reunion certainly deserve the thanks of the entire class and more praise than they will probably get and I wanted to tell you for them all that I was tickled to death with the way the old class showed up.

Let's hope the same gang will feel like starting something for the next Reunion, it should be easier next time to get more men to help.

At present I have no business address and mail, duns, etc., should be sent to the Kenilworth Inn, Kenilworth, Ill., a large suburb of Chicago (nearly 200 inhabitants) where my family were living when I returned home.

This from another wearer of the khaki—Albert Gould, who writes from Troop A, First Ohio Cavalry, El Paso, Texas:

You probably are surprised to hear from me from this part of the U. S. A. but it is something like this. I was so inspired and thrilled by the Reunion parade at Nantasket and all the other militaristic stunts that when I arrived in Cleveland a few days later I couldn't resist the influence. Enlisted with Troop A and since then have been taking my own little part in the "Bloodless Victory" on the Border—not to mention a sweltering two months as dismounted cavalry in Columbus, Ohio, cornfields.

We just returned the other day from a six weeks' tour of border patrol near Fabens, Texas. It was a wonderful six weeks of night and day duty riding the various fords along the Rio Grande over a 35-mile stretch. Always armed to the teeth and expectant, but sufficiently confident that the "Spiks" were more harmless and scared than we, so that we could thoroughly enjoy it. Occasionally letters or wires from Cleveland employers gave hope of furloughs but in the end all such attempts to get back to our work failed and we have since become reconciled to the unescapable fact that we are in the army—and are in to stay until ordered home.

Forgetting what we are losing out on in civil life at home it is really great sport here in Texas. There has been an abundance of gunning—duck, quail, and rabbit. The rifle and revolver range work is pure sport and now that we are back in civilization we are having morning manœuvres with the rest of the Ohio and the Michigan cavalry which are anything but tame. With promises of polo games in the afternoons and a few other concessions we hope to survive until the Powers figure out how to back out and let us go home. "Out of the trenches by Christmas" was our motto once but that has been in the discard for a couple of weeks now—as hopeless.

Having a wonderfully fine crowd of fellows in the same predicament helps a lot. Have one other Tech man in our organization whom you know—Tyler Carlisle of the good class of 1910 ex-quartermaster-sergeant of the troop and now sergeant major of the Ohio Cavalry Squadron. We both hope to be in Cleveland by the time the Technology Clubs Associated have their gathering there.

Was glad to receive the last *Mitten* and hope that it, along with other class mouthpieces, will continue to flourish. June proved how much latent spirit exists in the breasts of 1910 and let us all see that it continues to express itself.

From Hartford, Conn., we hear from George L. Mylchreest:

Just a line to let you know that I am "alive and kicking" even though I did have the pleasure of attending the Reunion and of taking in all of the events, class dinner, the rough house at the City Club, the parade, both in Boston and at Nantasket and all the other great events. It was an event I shall never forget.

As for my present occupation I am at the same place I have been ever since graduation. I now have charge of all of the designing in connection with the structural work of this office, Ford, Buck & Sheldon, consulting engineers. R. A. Smead is with me in this office. He is still single.

I am happy in my new home with the wife and boy who is now almost five years old.

As for the local news, the class showed up well at the annual banquet on January 6 at the Somerset, twelve of our number being very much on hand. We gave the first class cheer of the evening and held up our end of the singing and cheering. Sit was on hand as usual, Herb Cleverdon, Christiansen, Gorton James, George C. Connor, Avery, and Allen Curtis. Arthur Curtis was on hand, too, and the list of his activities sounds like the Chamber of Commerce list of industries of a town. Curt is in politics, real estate, auto supplies, etc., *ad infinitum*. Paul E. Thompson, Course X, was on hand to the surprise and delight of his old pals and described with gusto the work of raising cranberries which is his line. R. W. Brush and your secretary were also "among those present."

Your secretary, by the way, has just changed his job and is now electrical engineer with the Federal Power & Light Co., 35 Congress street, Boston. The work includes some traveling to Ohio and Iowa and looks pretty good. The only address you need to remember, though, is Box 1275, Boston. Keep this in mind and write early and often to your secretary.

1911.

ORVILLE B. DENISON, *Sec.*, 63 Sidney Street, Cambridge A, Mass.
HERBERT FRYER, *Asst. Sec.*, 35 Federal Street, Boston, Mass.

After having read the able article of Dr. George E. Hale, '90, in the November REVIEW, concerning the mobilization of Technology's resources, together with subsequent reports and articles in the earlier pages of this issue, no 1911 man can fail to be impressed with the sincerity and practicability of the movement. Your secretary believes it to be the duty of each loyal M. I. T. 1911 man to send a letter *very soon* to the aforesaid secretary at 63 Sidney street, etc., giving a synopsis of the duties performed and positions occupied since leaving the Institute. You may well imagine the potential value of a card catalogue made by the secretary from such data concerning classmates, for then he would have at his finger tips such details concerning the men affiliated with 1911 as might at any time be desired by the members of "The Committee for Mobilizing Technology's Resources." OBEY THAT IMPULSE!—At this writing your secretary is just conva-

lescing from an illness which lasted through practically the whole of January. What started in as a common garden variety of grippe, in a few days developed into pneumonia, hence the long time of being laid up.—Who do you suppose is also using the immediate present as a period of convalescence? None other than your secretary's regular side-kick—Charles Augustus Barker. Yes, Charles was stricken with appendicitis on Christmas Day, and operated upon the next day. Some complications made the case a most serious one, but Gus fooled 'em and Gosh! he's the same old Gussie now. When you are told that Bert Fryer had even ordered the flowers, having received a "leak" concerning the case, you can see Charlie had a tight squeeze. Charlie, by the way, as a member of the sales-force of the Norton Company in Worcester, has been given a territory comprising Missouri, the two Dakotas, Colorado, Utah and Nebraska. Luckily he was at home for the Christmas holidays, but will return West very soon.—Here's some good news concerning one of 1911's "good old scouts":

Mr. and Mrs. Fred E. Osborne announce the marriage of their daughter Mildred Lillian to Mr. Charles Foster Hobson on Saturday, the second of December, Batavia, New York.

Mr. and Mrs. Hobson are now at home at 66 Porter Terrace, Lowell, Mass. Good work, Charlie!—The latest addition to the list of "1911 Juniors" is Frederic Isaac Hausman, whose arrival on January 15 is announced by Mr. and Mrs. Isaac Hausman in Toledo, Ohio. Congratulations, Hausie!—Following a five-year search the secretary has at last located Scotty Kimball. He is with the General Electric Company in Schenectady, being connected with the foreign department.—Either Norman Lougee is absent-minded, Uncle Sam sometimes loses mail, or the secretary received and lost an announcement. At any rate in a letter of December 12, Norman said:

I am planning on being married the 27th instant. Will send you an announcement so you can get the name straight, if you want to put the event in the "humorous column."

No further details available. Now come, Norman?—How, why or when the gentleman reached his present whereabouts, is unknown to your scribe, but right around Christmas a card reached the secretary, having left Calcutta, India, on the 17th of November, which was signed, Phil Kerr II, 1911:

If I ever get a breathing spell I am going to write you a little about what has been happening to me, Merry Christmas, Denny.

???, Phil!—One of the best correspondents which the secretary has is Suren Bogdasarian, a Course IV man. Bog is certainly imbued with class spirit and seems always to be "on the job" with it. Here are some extracts from a recent newsy letter from him, dated November 23:

Here goes, at last, for a few lines which I intended to write since last March, when I first came out to Ohio.

February 29 saw me in Massillon, Ohio—then at that time it seemed to me like a muddy old dump. The next train East would have suited me well, however I stuck it out. If I should be asked as to what I think of Massillon—I would say (right off the bat) “can’t be beat.” It is a beautiful, clean modern city with many beautiful homes. I was with the Massillon Bridge & Structural Co. By the way, Massillon is the home town of Blackburn, the Boston Braves Catcher—besides the professional foot ball team known as the Massillon Tigers. This Sunday they play the Canton team composed of Jim Thorpe, Soucy and King of Harvard and others. Both teams have gone through so far with a clean slate. The rivalry between the two teams is fierce and the fans certainly do support them. Homes are put on bets—there are still fools left even in Ohio.

So much for Massillon. I left the Company down there the last of August to take a position with this firm on their new plant work. The plant work is Shell Shop No. 2 where 9.2-inch shells are made. The work is practically completed. As for this town, well the less one talks about it the better it will be. Pete White and Nickerson—Course I man,—are here as you doubtless know.

I received a better offer by the Carnegie Steel Company, New Castle, which I have accepted and will report for work the first of next month. My address will be in care of the Carnegie Steel Company.

I certainly regret that I was unable to be present at the great doings in July. It is all in the game and will look forward to our tenth anniversary.

And finally, Dannie, my congratulations, and wish you prolonged happiness in the one best venture of life—marriage.

—Fine work, Bog! I hope the reproduction of this newsy letter will start a lot more letters on the way from 1911-ers.—“Mark Anthony” Grossmann is now metallographist for the American Vanadium Company, Bridgeville, Pa.—Howard Ireland is still with Dunn & McCarthy, the shoe kings of New York state, and at present is at their Binghamton plant, although his permanent address is in care of the company at Auburn, N. Y. He writes that R. W. Bierer, ’11, is now production superintendent of the company’s Binghamton plant.—Jack McAllen is back from Kink, Alaska, and is now connected with the staff of the College of Mines, University of Washington in Seattle.—Eric Ridstrom, who was connected with the class for a short while in Course II, writes that he is now secretary of the Western Machine Company in Milwaukee, Wis.—Our old friend, T. Polhemus, writes from Benton, Wis.:

Things are coming fine out here. Started out the new year pretty lucky. Won a \$250 Victrola for nothing and received a fat bonus from the company.

Hope to get home in the spring and see some of the boys.

Have built two mills and sunk four shafts this summer. At present I am operating superintendent of two mines here at Longhorn.

—Glad to hear from you, T.—The secretary has had letters returned for lack of proper address from the following men: Armand Pauvalid, C. S. Pratt, F. M. Saqui, L. M. Sandstein, W. Y. Stamper and W. J. Wilson. Do You know where any of them are? Where are they? Thanks!

Address Changes.

Walter D. Allen, 524 Gurdon St., Bridgeport, Conn.—Kester Barr, 154 Highland Ave., Buffalo, N. Y.—Charles L. Bartlett, Alcoa, Blount County, Tenn.—Royal M. Barton, care of Metropolitan Electric Company, 145 Fifth St., Reading, Pa.—Suren Bogdasarian, 227 Lincoln Ave., New Castle, Pa.—O. H. Chase, care of American Mutual Liability Insurance Company, 293 Bridge St., Springfield, Mass.—William H. Coburn, Waverley, Mass.—M. A. Grossmann, 42 Bradford Ave., Crafton, Pittsburgh, Pa.—George B. Curwen, 354 Delaware Ave., Palmerton, Pa.—Paul A. Cushman, 38 Stedman St., Brookline, Mass.—S. A. Francis, 336 Vinewood Ave., Detroit, Mich.—James O. Greenan, 805 Crocker Building, San Francisco, Cal.—R. T. Haslam, 1294 Nicholson St., Cleveland, O.—Charles F. Hobson, 66 Porter Terrace, Lowell, Mass.—W. K. Hodgman, Jr., 19 Cedar St., Taunton, Mass.—Scott P. Kimball, care of Foreign Department, General Electric Company, Schenectady, N. Y.—R. S. Pease, 219 High St., Berlin, N. H.—T. Polhemus, Longhorn Mine, Benton, Wis.—Eric H. Ridstrom, Western Machine Company, 248 Fourth St., Milwaukee, Wis.—S. M. Schmidt, 415 Clinton St., Cincinnati, O.—D. W. Southgate, Stahlman Building, Nashville, Tenn.—N. S. Wade, Salem, N. H.—J. B. Walcott, 19 Congress St., Boston, Mass.—Noyes Weltmer, Tyrone, N. M.—P. D. White, 105 East Baird Ave., Barberton, O.

1913.

F. D. MURDOCK, *Sec.*, 605 Bird Avenue, Buffalo, N. Y.

A. W. KENNEY, *Assoc. Sec.*, M. I. T., Cambridge, Mass.

If any one thinks that this writing of class notes is a pleasure, it must be because he has never tried it. The only thing that makes such a fate tolerable is the fact that there is sure to be some news for the matrimonial column; and this month as usual we are right there. A clipping which came just too late to go in the last number announced the marriage of Miss Mildred Daniels to E. L. Bray, VI, last November. George Sampson, II, assisted in the happy ceremony by being best man, so it was a real 1913 affair. Bray and his bride are now living in Waterbury, Conn.—One never can tell. We had George Richter, X, reserved as a nucleus for the bachelors' baseball team at our twenty-fifth reunion, some twenty-one years away, but the Boston *Transcript* puts out that pipe—to quote:

Mrs. Marie L. Coddington announces the engagement of her daughter, Gladys Leslie, to George A. Richter.

Oh George! Miss Coddington has a good share of Scotch-English blood, but we have Georgie's word that permanent peace terms have been agreed on.—Lester Hoyt, V, and Earle Caldwell, X, took

brides last summer.—Sam Rogers, II, was married to Margaret Vaughan Salter in Duluth, Minn., on December 11, 1916. The best wishes of the class for long life and much prosperity go to all these fortunate people.

A Christmas card from John Livingston, X, mentioned the fact that John W. Livingston, Jr., sent his regards to his father's classmates, and hopes as soon as possible to be a real Tech man himself.—Jack Farwell has left the employ of the American Ammunition Company, but is still in the hazardous business of making ammunitions, now with the Packard Fuse Company of St. Catherines, Ont.—Mayo Tolman, XI, who is director and chief engineer of the West Virginia State Department of Health is the author of a paper published in the *American Journal of Public Health* on the West Virginia Flood of August 9, 1916. Immediately following that disaster, Mayo and his assistants, Tech men, did very efficient preventive work in sanitation.—Tom Lough's, I, letter-head proclaims him a civil engineer, and knowing Tom that is easy to believe. He writes:

Notwithstanding the high price of eggs and lignite, [I have managed, by strict avoidance of matrimony, movies, and kindred financial pitfalls, to indulge in the conventional three meals a day and downy cot at night. I also beg to announce my recent election to the office of county surveyor of Morton County, N. D., with offices at Mandan, N. D. This means food and shelter for the next two years and so my worries are ended for the present.

The past summer has seen me posing as a landscape architect. The county expended a considerable amount in terracing the Court House Hill and in constructing concrete walls, steps, retaining walls, a park lighting system, etc., mostly on filled ground, and I, as county surveyor, had charge of said beautifying performance. I will say that the hill is now a most pleasing spectacle and moreover, the unusual features of design should attract engineers from all corners of the globe. Drop that brick!!

It is with tears in our editorial eyes that we have to admit that the finest class that ever left the Institute made a very poor showing at the alumni banquet this winter. There weren't enough men to fill one table or raise a 1913 cheer. Even old regulars like Bill Mattson and George Clark were absent. The most exciting event from our point of view was the entrance of Paul Muther, VI, coming right from South America. Muther has been down in Colombia in business during the past year and had just reached Boston, when he heard about the banquet. Hanging his sombrero and machete on a nail, he hurried to join the old bunch. He admitted he was glad to be back in the States once more, but there is plenty of chance in Colombia for American capital and American men according to Paul.

Of course you remember that we elected a class representative on the Alumni Council this year. For a long time it was a dark secret who won this high honor, but the official returns have at last been announced. We are still so fortunate as to be represented by that brilliant statesman and eloquent orator, Mr. William Rhodes Mattson. The class may well congratulate itself on this

happy result and feel sure that its best interests will be ably forwarded by our illustrious colleague.

Several of the men have moved about since we met last June. George Clark, II, who was an instructor at the Institute has left and is putting in all his time as consulting engineer with the Crosby Steam Gage and Valve Co. George presented a paper to the American Society of Mechanical Engineers this winter and told how safety valves ought to be designed. Now he won't rest in peace till he sees everybody using the Clark valve.—Guy Buchanan, V, who was on the research staff of the New Jersey Zinc Co. left that position to become a prof. at the Institute this fall. He is in charge of the Experiment Station of the new School of Chemical Engineering Practice located at the works of the New England Gas and Coke Co. in Everett. Thinking real hard it seems as though Guy is the first of our class to become a prof. but we wish him no hard luck on that account.—Earle Caldwell, X, was at the Niagara Station of the school as assistant director, but we understand he has left there to go into business for himself.—That always genial and smiling class-mate, Arthur Carpenter, X, drifted back into Boston for a few minutes last January. The severe responsibility of being a recognized expert on sewage filtration rests lightly on Arthur's shoulders, and he looks as young as ever. He still keeps an eagle eye on the water supply of the city of Akron, and we infer from scraps of his conversation that he must be becoming one of the leading citizens of that metropolis. The great regret of his life, however, is that he was not able to come to the Reunion. If he really knew what he missed, he would be inconsolable.—George Richter, X, strolled into the secretary's lab the other day, and it must be confessed that George is getting thin, although he looks very happy. If George were already married we might attribute this to his wife's cooking, but as George doesn't expect to reach that state until June, the only conclusion that we can draw is that it is NOT due to over work. Knowing him as well as we do, we feel sure this is a safe deduction.

Eddie Hurst, II, is in Hartford, Conn., for the present.—John A. Gann, X, who did graduate work with us has returned from Germany. He writes:

Last August I returned from Germany, where I spent the last three years. In 1915 I received the degree of "Dr. Ingr." (Doktor Ingenieur) from the technical school in Braunschweig, having worked under Professor Feundlich; and in 1916 the degree of Ph. D. from Göttingen, having worked here under Professor Zsigmondy. My three years abroad proved to be not only pleasant, but very successful, in spite of the war. I am glad that I had the opportunity of being in Germany during the first two years of the war, as I was thereby enabled to see and hear many interesting things that otherwise would have been impossible.

Since October I have been working for Rhön and Haas, where I am now employed as chief chemist.

Ira Knight, VI, has left the Underwriters' Laboratories, and is now working for a power company.

Gene Macdonald, I, has entered the employ of Macy's the New York department store, where his work will be in connection with putting their delivery system on an efficiency basis. This is a novel field, in which Gene's ingenuity will count heavily.

Address Changes.

V. V. Ballard, Room 14, C. B. & Q. Depot, Lincoln, Neb.—S. Boydasarian, 227 Lincoln Ave., New Castle, Pa.—H. Brande, 332 Stratford Ave., Pittsburgh, Pa.—A. F. Brewer, 447 Main St., Orange, N. J.—K. R. Briel, 318 W. 57th St., New York City.—G. H. Buchanan, 29 Harvard Ave., Brookline, Mass.—G. R. Burnes, 11 Hyde St., Revere, Mass.—A. Butts, Box 89, S. Bethlehem, Pa.—W. R. Bylund, Hyatt Roller Bearing Company, Newark, N. J.—J. H. Cohen, 1411 Commonwealth Ave., Boston, Mass.—A. T. Gibson, 6168 Ocean View Drive, Oakland, Cal.—H. O. Glidden, care of L. H. Field, Field Bldg., Jackson, Mich.—J. J. Harty, Greenville, Miss.—R. B. Haynes, 254 W. 74th St., New York City.—A. L. Higgins, 102 School St., Watertown, Mass.—Edward Hurst, 18 Asylum St., Hartford, Conn.—M. T. Hsu, care of Superintendent's office, Hangyang Iron Works, Hankow, China.—J. W. Knight, 1310 Elmwood Ave., Auburn, R. I.—F. W. Lane, 86 Button St., New Haven, Conn.—A. D. Marsh, 600 W. 179th St., New York City.—F. B. Morton, 175 Thayer St., Providence, R. I.—A. G. Raunez, 521 Hicks Bldg., San Antonio, Texas.—G. H. Robb, 30 Nursery St., Salem, Mass.—S. W. Selfridge, University Club, Salt Lake City, Utah.—M. J. Shafron, Leoffler Hotel, Washington, D. C.—W. D. Stevens, Houghton, Mich.—E. G. Taylor, Science Hall, Madison, Wis.—A. G. Waite, Dragoon Tungsten Mining Company, Dragoon, Ariz.

1914.

C. J. CALLAHAN, *Sec.*, 14 Prospect Street, Lawrence, Mass.
ELMER E. DAWSON, JR., *Asst. Sec.*, 28 Washington Avenue,
Winthrop, Mass.

Elsewhere in this issue, you will read much of the plans for preparedness which the alumni are making. The class of 1914 should do its share in this great work and you are requested to coöperate in every way possible with the committee.

At the annual alumni dinner, held at the Hotel Somerset on January 6 we had ten members of the class present: Bowler, Croker, Dawson, Thomas, Parsell, Lewis, Richmond, Woodward and Callahan were there. Plans were discussed for the annual class dinner. The date will be some time in March, and you will be notified ten days ahead, so all who are located and around Boston should make an extra effort to be present. Extra features are promised for this year's dinner, and a large attendance is expected.

The following items have been forwarded by H. B. Richmond, VI:

A. P. Shepard, VI, who spent the summer at McAllen, Texas as a member of the 2nd Field Artillery of the N. G. N. Y., is now back to civilization and is doing engineering work with Bird and Son at East Walpole, Mass.—R. F. Zecha, VI, is back at the Institute as instructor in the electrical engineering laboratory.—H. A. Affel, VI, who is with the A. T. & T. Co. in New York has just returned from an extended test trip to Fort Wayne, Ind. His next stop is Key West. We wonder why he always makes Boston on his trips east or west.—O. C. Hall, VI, has joined the benedicts and is working for the A. T. & T. Co. at Hartford, Conn.—S. W. Stanyan, VI, has returned to Boston and is now in the transportation department of the Boston Elevated Railway Co.—Howard Borden, I, who has just been appointed a second lieutenant in the army, writes as follows:

I am writing you with considerable egotism. You see I have made the engineer corps and am now a lieutenant in the army. Osborne is here at the barracks with me. He passed first out of 57 that took the exam. Seven passed the mental. Out of the seven four were Tech men and three of them of our class. Les Snow passed next below me but declined the position. I was third of the five who accepted.

We are having a great time here while it lasts but do not expect to be here long. We expect the border after next month but may stay here longer. We have only had six dances here since we came not to count those up town. We do the busy study act all the time. Today we just had an exam on field service regulations. We continue studying until we are gray headed.

I have been hoping to see Bent who is down at Newport News but we haven't been able to connect as yet.

It surely is good to know that of seven men who passed this stiff examination, three of them were from our class.

Donald R. Dixon, XI, called on your secretary while in Boston on a selling trip for the Atlantic Refining Company, with whom he is now associated. Needless to say we went over the old days at Mulberry Inn, East Machias, Me.—Nat Brooks, II, is now with the Wyoming Shovel Company. He had charge of their exhibit at the recent Good Roads Convention in Mechanics Hall.

The following address changes are to be noted: Ernest W. Westcott, care of Car Carborundum Co., Niagara Falls, N. Y.—Bayard H. Waterbury, 45 11th St., Franklin Pa.—F. Hastings Smyth, 19 Alton Pl., Brookline, Mass.—Arthur F. Peaslee, 499 Main St., Springfield, Mass.—Malcolm C. MacKenzie, M. I. T., Cambridge, Mass.—Edward A. Ingham, M. I. T., Cambridge, Mass.—Bertrand H. Hall, Oak Place, Akron, Ohio.

1915.

WILLIAM B. SPENCER, *Sec.*, 552 Main Street, Medford, Mass.
FRANCIS P. SCULLY, *Asst. Sec.*, 5 Exeter Park, Cambridge, Mass.

We are very sorry that to date none of the inquiries sent out to some of the men in 1915, concerning their opinion upon "Tech-

nology's duty to the National Government" have been answered. But nevertheless we feel that all the members of 1915 are very much interested in this subject, and have withheld their opinions because perhaps they felt their experience would not warrant a full expression of their ideas. Yet we ask again that anyone who has thoughts upon this subject, please express them openly, for even though some ideas may not be entirely practical, they will lead to the much needed, free discussion of the subject. Out of this widespread interest is sure to come ideas of means and ways whereby Technology, its Corporation, Faculty, alumni and students will be able to fill the place we all want to see it fill as the leading educational institution in aiding the government by its research and its trained men.

From time to time the "General Committee for Mobilizing Technology's Resources" may call upon you for statistics, aid, or particular service of some sort. We hope and feel confident that each 1915 man will do his part to support the general committee in its great work.

The movement is a big step toward national preparedness, not only to keep our country fit in the dangers of war, but also to maintain its rank among the leading commercial nations of the world. A good, scientific research into the resources of the country, of our industries, and our finances is a basic starting point for this preparedness.

A fundamental knowledge of Technology and her alumni is the best way of beginning our efforts to aid the national government. This is the first aim of the committee, so give it all the help you can.

The first class dinner since the Dedication Reunion, was held on Saturday night, November 18, at the Boston City Club, and it was very successful. Thirty-two members of the class and the two speakers of the evening were present. "Jack" Dalton presided and on his first appearance before the class since his marriage took his jollying good-naturedly, inviting the entire class out to see him, though not all at the same time.

After the dinner was served a short meeting was held at which it was decided to hold monthly luncheons at the Boston Tavern at one o'clock, on the first Friday of each month. These luncheons do not require any preconcerted arrangement but we hope to see all the fellows who can get to them regularly, and make them real '15 jubilees.

Harold Kebbon was the first speaker and gave a very interesting talk on the Walker Memorial, illustrating his talk by a large model which had been constructed on the table.

Everett Morss followed with his talk, telling the inside history of the raising of the money for the new buildings and endowment. "Mr. Smith's" identity, however, still remained as much a mys-

tery as ever. He held the attention of the fellows for at least three-quarters of an hour and inspired them all.

After Mr. Morss there was an informal discussion, the dinner breaking up at eleven, having started about seven.

Virgil Wardweel came up from Stamford, Conn., to attend the dinner, and A. E. B. Hall traveled from Portland. The rest of the fellows were located near Boston.

We pried loose the following information from the bunch at the class dinner. "Lary" Quirk and Ralph Malcolm are or were with the New York National Guard at McAllen, Texas. Henry Murphy is in Philadelphia with the Pennsylvania Railroad.

Bernard Lander's address, Chemists Club, Wappingers Falls, N. Y.—Edward Berinson, Box 193, Chrome, N. J.

Finkelstein, Bureau of Standards, Washington, D. C.—Nelson Stone and Charlie Williams are both with the Trussed Concrete Steel Company at Syracuse, N. Y.—Charlie Wolfe, X, was married in July and is now located in Kansas City.—M. B. Pinkham is now at the Harvard Business school.—George Nixon is with Whidden Beekman Company, structural engineers and builders, Boston.—"Ken," Boynton is assistant power apparatus specialist at the Philadelphia house of the Western Electric Company.—"Bill" Rooney and Homer Rogers are both at du Pont's, Wilmington, Del., testing shot-gun powder. We hope that their rise will not be too rapid.—Carleton W. Lovell is with the Pennsylvania Railroad at Chester, W. Va.—It is rumored that H. W. Lamson is engaged. We don't want to be false witnesses against our neighbors so we wish that our classmates who are contemplating signing any contracts of this nature would let us know definitely. The secretary has so many letters from young ladies who admire the men of 1915, inquiring just who are the eligibles, that he does not wish to create any discord by giving out the names of those who have already fallen.—Sidney Clark was back at his old job at the piano at the dinner. He is still with Gunn, Richards & Co. of New York. At the time of the class dinner he was working in Lawrence, but we met him a few days ago in New York and he is now located in Bridgeport, Conn., for a short stay.—If any of the class have a few thousands that aren't earning enough just drop a line to T. A. D. Fessenden and right away you'll be a young millionaire. He is a stock and bond salesman for Hayden, Stone & Co.—The address of Everett Coldwell is now 262 Liberty street, Bloomfield, N. J. He is with the Westinghouse Lamp Company of Bloomfield.—Dave Hughes is with the same company and is living in Newark with his wife. He married Zella Paul, on Tuesday, September 19, in New York City. Mrs. Hughes was a Back Bay girl.—Edwin P. Norberg married Lottie Halverson on Saturday, the 22d day of July in Los Angeles, Cal. Ed. is following up the profession of architecture on the western coast.—The latest 1915 man to take the vows is "Charlie" Norton our senior vice-president.

Charlie was married on Friday, December 22, to Bessie Lee, in New Bedford, Mass. They are now at home, 233½ Crosby street, Akron, Ohio.—George Urquhart's engagement to Miss Ruth Lyman was announced the middle of December. George is a chemical engineer at Syracuse, N. Y.—Percival J. Munn is engaged to Miss Greta Cady of Lowell, Mass. "P. J." is now in the structural department of Stone & Webster, Boston, Mass.

The Boston *Evening Record* under date of January 13, states:

Announcement is made of the engagement of Miss Madeline G. Haak, daughter of Mr. and Mrs. Charles F. Haak, 464 High street, Dedham, to Roscoe Dickinson, son of Mr. and Mrs. George E. M. Dickinson of Hyde Park. He is a graduate of M. I. T. and a member of its teaching force.

Fred Hurlbutt, who now is in Buffalo, N. Y., is engaged to Miss Margaret Chater. Many of us remember Miss Chater and congratulate Fred.

Three more marriages have come to us through newspaper clippings. In the Boston *Herald* of October 24, a note reads:

Mr. and Mrs. A. O. Fuller of Cambridge have announced the marriage, at their residence, 38 Concord avenue, of their daughter, Constance, to Paul Sampson Howes, an architect, of Akron, Ohio. The bride was graduated from Radcliffe College in 1907, and after studying architecture at the Massachusetts Institute of Technology for three years she has since practiced that profession. Miss Fuller and Mr. Howes were both members of 1915.

Long Branch, N. J. *Record*—Friday, November 17, 1916:

A very pretty wedding was solemnized at St. James' Episcopal Church last evening at six o'clock, when Miss Florence Edna Wooley became the bride of Harold R. Patten, of Meriden, Conn. Earl Andrews, of Brooklyn, a classmate at college of the bridegroom was best man. Mr. Patten holds a position in the mechanical department of the N. Y., N. H. & H. R. R. in Boston.

From the Framingham *Item*:

Miss Nettie Congdon, niece of Mr. and Mrs. A. S. Trowbridge, Beech street, and Ira Sibley Lewis, son of Mr. and Mrs. Ira L. Lewis of this town, were married Sunday morning, December 24, at Bethany Universalist church. The Rev. F. A. Mooney, pastor of the church, was the officiating clergyman and the wedding took place in the presence of many relatives and friends at 9.15 o'clock.

George F. Hall of Boston and Arthur S. Trowbridge of this town were the ushers. Immediately after the marriage Mr. and Mrs. Lewis departed by automobile for Worcester, where they took a train for New York City, where Mr. Lewis is connected with the engineering department of the New York Telephone Company. They will make their future home at 160 Seaman Avenue, New York City.

Mrs. Lewis is a graduate of Framingham High School and the State Normal school at Fitchburg. She also attended Simmons College at Boston. For several years she has been a teacher in the schools of Dublin, N. H., and in the Apple and Hollis street schools of this town. Mr. Lewis is a graduate of Framingham High and of Massachusetts Institute of Technology.

To all those recently married and to all who have declared their intentions we extend our best wishes and those of the class of 1915 that their lives may be filled with joy and happiness.

We were very much pleased to receive a nice Christmas card

from Loring Hall at Socony, Shanghai, China.—Henning J. Berg writes as follows from Corcoran, Cal.:

Since the big time of June I have heard nothing,—not even the REVIEW from the class of '15. Let's hear something from the East. I hear from a few members at times. Brown is working in San Francisco for the Hammond Engineering Company. (Which Brown is this?) Don't know what De Fremery is doing but think he is located out here. I am with the S. O. Co. "down in the jungles"—i.e., in the oil fields: Hard graft but the "simple life."

Carleton W. Eddy is back again at the "Stute," this time getting a degree in Course VI. His eyes got bad last year so he had to be satisfied with one degree, that in Course II. Good luck this year for the Course VI degree. His home address is 54 Magnolia street, Dorchester, Mass.—F. H. Boynton has gone to Indianapolis, Ind., his new address is R 244, Y. M. C. A.

Here is a letter from M. F. Brandt:

Ever since that glorious Reunion, both of Tech and '15 I've been intending to write you of my new address, and to ask you to let me know how much I owe the class.

I'm down here in Wilmington, Delaware, and happily I am not the only one here. Homer Rogers and I have been together quite a few times, and recently I met Hanson, who is right nearby. Mitchell I've met a couple of times and the Chemical Show in New York last September was a reunion of 1915. There were Mitchell, Mudge, Dodd, R. E. Curtis, and a bunch more whose names I do not recall, but it was a mighty enjoyable time.

At present I am industrial research chemist at the laboratory of Francis I. du Pont, in Wilmington, Del., address 109 West 10th street, Wilmington, Del.

In order that all 1915 men may know the financial standing of the class we submit below the summary of receipts and expenses from August, 1915, to December, 1916.

Receipts.

Aug. 1, 1915. Balance in bank. (Received from E. E. Place),	\$270.97
Class Day surplus,	61.68
Loan for commencement picnic returned,	25.00
Class dinner (Louis' Café),	76.00
Class dinner (University Club),	29.80
Reunion sale of caps,	32.00
Class dinner (Hotel Bellevue),	208.00
Class dues (including \$32.00 paid for year 1916-1917),	148.50
Interest,	5.15
	<hr/> \$857.10

Expenses.

Class letters,	\$57.54
Flowers (T. J. Barry),	10.00
Class dinner (Louis' Café),	83.15
Class dinner (University Club),	33.62
Printing and stationery,	9.50

Miscellaneous expenses,	\$10.15
Reunion expenses,	367.75
Secretarial expenses (stamps, telephones, etc.),	7.47
Balance on hand December 1, 1916	277.92
	<hr/>
	\$857.10

1916.

JAMES MORRISON EVANS, *Sec.*, 17 Gramercy Park, New York, N. Y.
DONALD BLAKE WEBSTER, *Asst. Sec.*, 18 Clarendon Street, Malden, Mass.

Gradually the class is "digging in" to the world's affairs in general, and with the dawn of prosperity and the banishment of the proverbial wolf, its members are finding time to rekindle their loyalty and their letters to the secretaries are becoming larger, more frequent and vastly more interesting.

The class still retains its indomitability in the matter of tackling weighty problems early and without flinching. Witness the following, and read in the list of victims blithe bachelors of a year ago.

Under the startling heading of December 22, "Prof. Wilson of M. I. T. Married in Albany," we read:

Miss Pearl M. Rockfellow, daughter of Mrs. Clara M. Rockfellow of Albany, N. Y., was married tonight to Prof. Robert E. Wilson of the Massachusetts Institute of Technology.

We feared at first for our genial exponent of the troublesome dx, but no,—Robert Erastus is unmistakable and we congratulate him, eyeing his title with interrogation.—Under the simple caption, "Allen—Horne," dated Boston, December 29:

Miss Edith N. Horne, only daughter of Mr. and Mrs. R. B. Horne of 14 Bates road, Watertown, was married yesterday at the home of her parents to George Parker Allen, son of George Allen of 129 Charles street.

Allen is well remembered from his first two years with the class. We wish him a world of good fortune.

From the *Boston Globe*, November 4:

Miss Marion Hendrick, only daughter of Mr. and Mrs. George W. Hendrick of Nashua, and George Everett Ray, son of Mr. and Mrs. George H. Ray of Gardner, Mass., were married this afternoon at the Hendrick residence, 18 Wellington street, by Rev. Daniel I. Gross of the Pilgrim Congregational Church.

Ray is an inspector and superintendent of construction for the Boston & Maine Railroad, and was a Course I man. We'll wish him a "C" in household economics.—From the *Medford Mercury*, December 22:

Edward Adolph Graustein of 19 Arlington street, Cambridge, and Miss Grace Marian Caulkins, daughter of Mr. and Mrs. Frederick J. Caulkins, 79 George street, this city, were married at a pretty church ceremony in the First Baptist Church last

evening, by Rev. William Austin Hill, pastor of the church, in the presence of a large number of relatives and friends.

Graustein is a graduate of Harvard and spent last year at the Institute with the class, and is at present an engineer with the Turner Falls (Mass.) Power & Electric Co.

Here are two who enjoy the swimming but prefer not to plunge.

The *Boston Transcript* of December 30 has the attractive heading, "Cincinnati-Boston Romance," and under it:

Announcement in Cincinnati today of the engagement of Miss Helen Irwin Justis of that city to Donald Omar Dunn of Boston will have interest in widely scattered communities in the country.

All the world loves a romance, and here's one brought to our doors with a 1916 man as hero. We can't turn to the last page yet but we'll look with interest for the next installment:

Of especial interest is a recently received announcement from the *Boston Post* of November 12:

Cards are out announcing the engagement of Miss Marion Hill-Smith to Mr. Kemerton Dean. Miss Hill-Smith's father, Mr. Frank Hill-Smith, is well remembered in the art circles of Boston. Mr. Dean is a graduate of the Massachusetts Institute of Technology with the class of 1916, and is a prominent clubman. He is the son of Commissioner Josiah S. Dean of this city.

Kem always was a rather clubby chap about the 'Stute, but that he has used his qualifications to attain prominence exceeds our fondest expectations. We are mighty glad that he has recovered from his illness of last summer, and wish him the brightest of futures. We are expecting first hand news from him shortly, in response to our standard red "bait" card sent some time ago. "Tom" McSweeney "bit" at the request for information, and sends us jots of his own life story with brief notes on some of the other fellows with whom he has come in contact. Here he is:

Your official Christmas card with its commanding heading leaves me nothing to do but to obey. My address is still Framingham, Mass., and my life story follows.

After commencement I went with Charles R. Gow, a foundation contractor (the man who gave the senior lectures on foundations). I was with him until late in August, when the manager of the Boston branch of the Geo. A. Fuller Company, for whom we were then finishing a foundation, offered me an opening with them. I took it and ever since I've been supervising the installation of the reinforcing steel on the job.

I've run across several of our classmates on the job. Evans (IV) and Joe Duggan (XI) were working in the office of J. Sanford Thompson whose partners designed the forms and figured the reinforcing for the building. In October our transitman was away for the week, and Merrick Monroe (XI) took his place.

Except for Merrick and Joe and I (I should also mention Ferg Shuey, who is chemist for the Florida Board of Health), I think all the rest of Course XI has taken up the vocation of assistant instructors. At any rate, that was the impression I got as I wandered through the new buildings recently.

I've run across a great many others from the class lately, and through them heard of most of the rest. They all seem prosperous, and without exception all seemed glad to be working (that is, working for a living). I'm with them!

—R. E. Gruber has located definitely with Merck & Co., manufacturing chemists, and his new address is care Merck & Co., Rahway, N. J.

Charlie Lawrence writes an interesting account of himself under the letter head of the Boston News Bureau, and leaving out the passages in which he scathes the recipient for negligence, we'll pass and print the rest:

As you see from the letter heading I am landed in a completely different line of work from what I prepared for at M. I. T. As you know, I was interested in certain phases of milk production, particularly on financing a milk farm, etc., and my first job was doing in rather mediocre fashion an accounting analysis of Mr. Barron's prize milk farm. After two months on that work I was offered a position on his financial newspaper, and took the offer, so now you can imagine me as a "cub" reporter learning to write shorthand and pounding a typewriter for a living. I can't complain of monotony for you can never tell what will happen next or what piece of work is to be done, and the stock market today is very active, as you know.

"Sandy" Claussen is developing into a local sales manager of Bemis Bro. Bag Company, and "Tom" Little is a general utility man in the same office. Henry Shepard has gone to Nicaragua to go on a ranch of a friend for six months, and is expected back in January or February. Salisbury Makepeace is working in his father's office at mill design, and according to reports is the only man who "knows how" according to the M. I. T. M. E. Department. Ullian is working for the Highway Commission, and that mainly completes my list of recent meetings.

It is interesting to note how many of our best men have forsaken professional work for business of one sort or other. Irving B. "Mac" sends one of his "way we do it at Cal" letters which is replete with information regarding some of our strayed sheep, and in which he voices the golden determination to pull his S. B. from the pigeon hole in June. But why paraphrase when the original is available?

I meant to send you a Christmas card but I didn't know where to get you, so now will write you a letter. Wish you all kinds of success this coming year—; when will you have enough to retire?

(? ? ? ? ?)

Let's see what news I know. I didn't get to the alumni banquet but I heard that a good crew were there. Was down in New York over the holidays and saw "Raf" Alfaro and McRae down at the Frolics looking them over. Coleman is still in the T. M. Lab at the 'Stute. Nelson McRae is working in munitions in New Haven and Alfaro for the N. Y., N. H. & H. in the Grand Central, doing everything. Saw Knight Owen up in Boston around Thanksgiving, just the same as ever. Ralph Fletcher and Rusty breeze in about every Saturday—they had quite a party in New York after the Yale-Harvard game. Steve Brophy has quit architecture and is sub-manager under Ike for a big pageant a New York concern is pulling off here in Boston; pretty soft for him. Kem Dean gets around quite a bit. Chuck is as well as ever now. I guess that's all the news I know, because all I have been doing is working.

(O, for a movie of that noble labor, Mac!)

I guess I ought to get my degree this June and then the cold world for yours truly. Lev Lawrason and Dicky Rowlett get through this midyears all right.

Earl Pitman writes from Berlin Mills in New Hampshire:

I have a very agreeable job in the research lab of the Berlin Mills Company. I have done a little work on the hydrogenation of cottonseed and peanut oils, but my big problem is the hydrolysis of pine chips to sugars from which we will probably make lactic acid or ethyl alcohol. Lately Hoffman and myself have started work on a process for the production of liquid SO_2 . Harold Fuller has been doing routine work for the most part.

Here at last are three who deserve commendation; bucking abstruse problems according to the methods hammered in on the fifth floor of Pierce.

So goes the class in its attempt to glean its share of the world's goods and praise, and to give its share in return. We feel that we are sufficiently seasoned as alumni now to take our infant place with credit in the great Alumni Association; and the February letter to be sent out by the secretaries to the members of the class is the *premier pas* in the right direction. It is designed to infuse "pep," bring forth gold and information, weed out recalcitrants and revolutionize matters in general. Here's hoping!